Western Resource Adequacy Program

Change Request Form

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Co-Sponsors Information (optional)	
Name:	Organization:
Phone Number:	Email:
Name:	Organization:
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Name:	Organization:
Phone Number:	Email:

Type of Change Requested

- ☒ Correction *(i.e., revising erroneous language or language that needs clean-up for grammatical errors or inconsistency across governing documents - no changes to intent or policy)*
- ☒ Clarification *(i.e., revising language to better represent existing intent, no changes to functionality or policy)*
- ☐ Enhancement *(i.e., revising language to expand upon existing intent or functionality)*
- ☐ New Protocol, Business Practice, Criteria, Tariff *(i.e., new language to accommodate new functionality or policy not existing today)*
- ☐ Change *(i.e., a change in the existing policy – will replace an existing language)*
- ☐ Other *(i.e., changes that do not fall into the categories listed above)*

Description of Change

Provide a description of the issue*:

Following the completion and Board approval of all WRAP Business Practice Manuals (BPMs) in September 2024, WPP undertook a comprehensive review of the BPMs throughout 2025 (such reviews will take place annually). This Non-Task Force Proposal (NTFP) contains non-substantive changes to the BPMs that were captured during the review process, encompassing minor corrections to clean-up erroneous language and housekeeping edits for consistency. None of the BPM edits in this NTFP reflect changes in intent, functionality, or policy. The following BPMs are affected:

- BPM 101 – Advance Assessment
- BPM 102 – Forward Showing Reliability Metric
- BPM 103 – Participant Forward Showing Capacity Requirements
- BPM 104 – Determination of Capacity Critical Hours
- BPM 105 – Qualifying Resources
- BPM 106 – Qualifying Contracts
- BPM 107 – Forward Showing Deficiency Charge
- BPM 108 – Forward Showing Submittal Process
- BPM 109 – Forward Showing Transition Period
- BPM 201 – Operations Program Timeline
- BPM 202 – Participant Sharing Calculation Inputs
- BPM 203 – Program Sharing Calculation Inputs
- BPM 204 – Holdback Requirement
- BPM 205 – Energy Deployment
- BPM 206 – Settlement Pricing
- BPM 207 – Settlement Process
- BPM 209 – Energy Delivery Failure Charge
- BPM 210 – Binding and Non-Binding Participation in Operations Program
- BPM 301 – Program Review Committee Workplan Development and Approval
- BPM 302 – Program Review Committee Proposal Development and Consideration
- BPM 303 – Expedited Review Process
- BPM 304 – Amendments to Schedule 1 and WRAP Agreement
- BPM 401 – New Participant Onboarding
- BPM 402 – Protection of Commercially Sensitive and Confidential Information

Please provide the following information if known and/or available.

1. Provide a proposed solution to the issue described:

   See the specific language included in the attached red-lined BPMs. All edits are non-substantive changes that were captured during the review process, encompassing minor

corrections to clean-up erroneous language and housekeeping edits for consistency. None of the BPM edits in this NTFP reflect changes in intent, functionality, or policy.

2. Provide the specific document and language you would like changed:

Specific language included in the attached red-lined BPMs.

3. Provide a suggestion for how language could be updated to address issue:

Specific language included in the attached red-lined BPMs.

Impact of Change

Describe the benefits that will be realized from this change*:

Updates provide corrections and clarifications to BPM language, ensuring improved accuracy and readability.

Please provide the following information if known and/or available.

1. Any data/information available that would characterize the importance or magnitude of the issue (allows for file attachments):

Non-Task Force Proposal Request (optional)

A flag as a Non-Task Force Proposal indicates the Concept could be implemented without requiring further development into a Proposal by a Task Force. Please check the box below if you would like this to be considered as a Non-Task Force Proposal

☒ I would like this to be flagged as a Non-Task Force Proposal

WESTERN POWERPOOL

Western Resource Adequacy Program

101 Advance Assessment

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
101	0.1	RAPC Glance Version	Rebecca Sexton	9/12/2023
101	0.2	Public Comment	Rebecca Sexton	9/15/2023
101	0.3	RAPC & PRC Discussion	Rebecca Sexton	10/23/2023
101	0.4	RAPC Endorsement	Rebecca Sexton	11/9/2023
101	0.5	Board Consideration	Rebecca Sexton	11/11/2023
101	1.0	Board Approved	Rebecca Sexton	12/6/2023
101	2.0	Annual BPM Review	Maya McNichol	

Table of Contents

101 Advance Assessment

1. Introduction

The Advance Assessment Business Practice Manual (BPM) consists of two sections. The Advance Assessment Timeline section outlines the Program Operator's schedule for Forward Showing Planning Reserve Margin (FSPRM) and Qualifying Capacity Contribution (QCC) studies that will be completed 12 months in advance of the Forward Showing (FS) Deadline for the relevant Binding Season.

The Data Submittal section describes the Program Operator processes to calculate the FSPRMs and QCCs for the Western Resource Adequacy Program (WRAP) Region. FSPRMs and aggregated QCC values will be available publicly to all Participants. QCCs for individual resources will be provided only to the Participant that submitted the data.

1.1. Intended Audience

BPM 101 is intended for WRAP Participants and other interested individuals or entities and is particularly useful for those responsible for their organization's FS Submittal that need to ensure their organizations submit the necessary data by the correct time for the Advance Assessment.

1.2. What You Will Find in This Manual

BPM 101 includes two main sections: 1) Advance Assessment Timeline and 2) Data Submittal.

1.3. Purpose

To provide an overview of the Advance Assessment Timeline and Data Submittal processes for determining the QCC of Qualifying Resources and the FSPRM.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 101 or another BPM have their meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff that are specific to BPM 101 are defined here.~~

Advance Assessment Data Request: Data request from Program Operator to Participants for input into resource adequacy model to conduct Advance Assessment.

Advisory FSPRM: FSPRM calculated for a future season (T+3) during annual assessments. This is a non-binding but guiding value.

Customer Resource: A resource providing power generation and/or storage at a customer's property, such as a solar photovoltaic system, a rechargeable battery

system, or a battery-electric but not limited to vehicle and charging system with vehicle to grid capabilities.

Data Request Instruction Manual: The set of instructions provided by the Western Power Pool (WPP) to facilitate Participants filling out the Advance Assessment Data Request.

Historical Load Data: Load data from one or more Years prior to the current Year, such as the previous 10 Years. Historical Load Data is expected to consist of 8,760 hours (or 8784 hours for a leap Year) of data for a Year.

Request Management System (RMS): Software the Program Operator uses to receive and answer questions and requests from Participants.

Study Period: The timeframe being studied in the Advance Assessment, i.e., a Summer Season or a Winter Season occurring two Years and five Years after the Advance Assessment.

Thermal Resource: A resource using conventional thermal fuels such as, but not limited to, coal, natural gas, nuclear, and biofuel.

2. Advance Assessment Timeline

Table 1 shows the Advance Assesment timeline from the time the Program Operator sends out the request to Participants to fill out their Advance Assessment Data Request to the Board approval of the resulting metrics. ~~sends its data request through the provision and utilization of the resulting metrics~~ (both the two-Year-ahead binding metrics and the five-Year-ahead advisory metrics).

Table 1. Advance Assessment and Data Submittal Timeline[1]

Activity/Milestone	Summer	Winter
Program Operator sends out Advance Assessment Data Request	January 15 (T-2)	
Participant provides data to Program Operator for Advance Assessment	March 1 (T-2)	
Participant Reviews input data	April 1 – April 15 (T-2)	October 1 – October 15 (T-2)
Program Operator provides Participants with draft modeling outputs	September 15 (T-2)	February 15 (T-1)
Participant reviews modeling output data and addresses any discrepancies with Program Operator~~Any discrepancies reviewed and resolved~~	September 15 - October 1 (T-2)	February 15 - March 1 (T-1)
Program Operator publishes final modeling outputs~~Studies complete~~	October 31 (T-2)	March 31 (T-1)
Deadline for Board of Directors review and	January 31 (T-1)	June 30 (T-1)

[1] In this Table 1, T (or T-0) refers to the Year in which a Binding Season begins; T-x refers to the Year that is x Years before T; and T+x refers to the Year that is x Years after T.

approval of Binding FSPRM		
FS Deadline for Binding Season	October 31 (T-1)	March 31 (T-0)
Binding Season	June 1 – September 15 (T-0)	November 1 – March 15 (T-0 – T+1)
Season for which an Advisory FSPRM is Supplied	June 1 – September 15 (T+3)	November 1 – March 15 (T+3 – T+4)

Table 2 is an example timeline beginning with the Program Operator sending the Advance Assessment Data Request for the Binding Seasons in 2030-2031; note that the Program Operator will also supply Advisory FSPRMs for Binding Seasons in 2033 and 2034.

Table 2. Example Advance Assessment and Data Submittal Timeline

Activity/Milestone	Summer	Winter
Program Operator sends out Advance Assessment Data Request	January 15, 2028	
Participant provides data to Program Operator for Advance Assessment	March 1, 2028	
Participant Reviews input data	April 1 – April 15, 2028	October 1 – October 15, 2028
Program Operator provides Participants with draft modeling outputs	September 15, 2028	February 15, 2029
Participant reviews modeling output data and addresses any discrepancies with Program Operator~~Any discrepancies reviewed and resolved~~	September 15 – October 1, 2028	February 15 – March 1, 2029

Program Operator publishes final modeling outputsStudies complete	October 31, 2028	March 31, 2029
Deadline for Board of Directors review and approval of Binding FSPRM	January 31,2029	June 30, 2029
FS Deadline for Binding Season	October 31, 2029	March 31, 2030
Binding Season	June 1 – September 15, 2030	November 1 – March 15, 2030-2031
Advisory Binding Season	June 1 – September 15, 2033	November 1 – March 15, 2033-2034

3. Data Submittal

3.1. Advance Assessment Data Submittal Process

To support the Advance Assessment, the Program Operator will develop a resource adequacy model that represents the WRAP Region. Inputs to this model will be submitted from the Participants and will represent each of the Participant's loads and resources. The Program Operator will send data requests to the Participants for the items described in Table 3 below, which are necessary to complete the upcoming Advance Assessment for the applicable Summer and Winter Season. The WPP will post to its website a Data Request Instruction Manual for Participants' use in completing the Advance Assessment Data Request.

Table 3. Participant Provided Modeling Data

Advance Assessment Data Items
Participant Thermal Resource and Long Duration Storage data for all owned or operated units planned to be in-service for all or a portion of the Study Period as specified in the Data Request Instruction Manual.
North American Electric Reliability Corporation (NERC) Generating Availability Data System (i.e., GADS) or equivalent outage data (information on providing equivalent outage data will be posted on the WPP website) that can be used to calculate Equivalent Forced Outage Rates/Factors (i.e., EFOR/EFOF) for the last six Years for existing Thermal Resources and Long Duration Storage.

Hourly Load Profiles – Participant must provide Historical Load Data for the previous 10 Years. If a Participant participated in the WRAP in prior Years, such load data may already be available to the Program Operator and may not need to be resupplied.
Wind, solar, Storage Hydro, Energy Storage Resources (ESR), ~~and~~ Run-of-River (ROR) resources, and Demand Response Capacity Resources (by resource) that are planned to be in-service for all or a portion of the Study Period, as further detailed in the Data Request Instruction Manual.
Hourly generation profiles for the last 10 Years ~~(~~for existing ~~units) for~~ wind, solar, and ROR resources.
Nameplate (for wind, solar, Storage Hydro, ESR, and ROR resources).
Storage Hydro monthly QCC values (as calculated by the Storage Hydro Workbook – see *BPM 105 Qualifying Resources*) from the two most recently submitted FS Submittals (Winter and Summer Seasons), adjusted for any material changes anticipated for the applicable Binding Season being assessed.

3.2. Resource Registration Implications

Resources that are submitted with the complete set of required information by the Participant in the Advance Assessment Data Request will be considered registered by the Participant for the applicable Binding Season(s). Those registered resources, known as Qualifying Resources, will be included in the applicable Loss of Load Expectation (LOLE)/FSPRM assessment (in which they will be assumed to be available to mitigate loss of load for the WRAP Region) and will receive QCC values for that Binding Season. See *BPM 105 Qualifying Resources* for additional information on resource registration.

Resources for which Participants have planned retirement dates within the Study Period may need additional consideration. A resource for which a retirement is planned but for which the retirement date may not be considered firm may, at the Participant's option, continue to be submitted into the applicable LOLE/FSPRM assessment (in which the resource will be assumed to be available to mitigate loss of load for the WRAP Region) and submitted for QCC assessments, whether for determination of Effective Load Carrying Capability (ELCC) or of Unforced Capacity (UCAP). Alternatively, at the Participant's option, the resource may be omitted from the LOLE/FSPRM assessment (i.e., the resource will be assumed to not be available to mitigate loss of load for the WRAP Region) but may still be requested to have a QCC determined, and the resource registered for potential use by the Participant in the FS Submittal. Finally, the Participant may choose not to submit the resource into the Advance Assessment at all, in which case the resource would not be registered, and would not be a Qualifying Resource (see *BPM 105 Qualifying Resources* for late registration options). Resources

planned for retirement that are not submitted for the Advance Assessment but are later identified for use in the FS Submittal will be considered late registered resources.

Excepting resources planned for retirement, Participants must register all owned or operated resources planned to be in-service for all or a portion of the Study Period.

3.3. Modeling Data from Forward Showing Submittal

Certain data from previous FS Submittals will be able to be used for the Advance Assessment. The data in Table 4 will be taken from the Participant's previous FS Submittal, unless the Participant identifies changes to such data applicable to upcoming Binding Seasons and provides updated information. New Participants to the WRAP will be requested to provide this data separately (see *BPM 401 New Participant Process*).

Table 4. Modeling Data taken from Previous FS Submittals

Data Items
Contracts included in past FS Submittals (imports or exports) with counterparties external to the WRAP Region with contract end dates after the start of the season being modeled.
Capacity value of import/export transactions.
~~Demand Response program data.~~

3.4. Participant Review and Verification Process of Input Data

Once the Program Operator has input all necessary data into the resource adequacy model, Participants will be allowed a review of the input data (in the format used by the resource adequacy model or a format developed by the Program Operator) for their respective loads and resources. Model simulations will not be scheduled to occur prior to Participant review of input data. Participants will ~~proactively submit an RMS ticket to~~ inform the Program Operator if there is a discrepancy or error in the data and will work with the Program Operator to remedy the error; any Participant who has not informed the Program Operator about any discrepancies or errors prior ~~submitted an RMS ticket prior~~ to the deadline will be considered to have reviewed and approved their data.

3.5. Draft Modeling Output Results Review

The Program Operator will provide draft Advance Assessment modeling results to the Participants for their review. The modeling outputs that will be available for Participant review are listed in Table 5.

Table 5. Draft Output from Advance Assessment for Participant Review

Outputs

~~Resource index (a listing of registered resources, including unit name, nameplate, and type).~~
ELCC values by Variable Energy Resources Zone.
Proposed FSPRM for each Month of the Binding Season under study.

Participants will have an opportunity, as set forth in Table 2 of ~~this~~ BPM 101, to review the draft results and work with the Program Operator to analyze any potential discrepancies from expected results.

3.6. Advance Assessment Result Distribution

The final Advance Assessment results will consist of a LOLE study report that gives details of the study analysis, makes recommendations for a proposed FSPRM for each Month of the applicable Binding Season, and provides an Advisory FSPRM for each Month of the Binding Season five Years ahead. QCC studies or reports provided by the Program Operator will include the monthly ELCC study results for wind, solar, and short-term storage, as well as monthly QCC results for ~~Storage Hydro resources,~~ ROR, Thermal Resources, Long Duration Storage, and Demand Response for the applicable Binding Season. Advisory information will include ELCC curves for wind, solar, and short-term storage that can be used to determine future capacity values for new resources dependent upon the penetration of resources. A summary of studies and the output results is provided in

Table 6. QCC values for individual resources will be provided directly to the Participant that submitted the data for the Advance Assessment.

Table 6. Advance Assessment Results

Study	Resource Type	Methodology	Output Results
LOLE			FSPRM for each Month of the applicable Summer Seasons and Winter Seasons in the Study Period.
QCC Studies	Wind, Solar, and Energy Storage	ELCC	QCC values by Month for all wind, solar, and Energy Storage Qualifying Resources. Aggregated QCC values for wind, solar, and Energy Storage Qualifying Resources will be available to all Participants.
	Thermal and Long Duration Storage	UCAP	QCC values for Thermal Resources and Long Duration Storage. ~~Calculations~~ Resource-level $EFOF_{CCH}$ for determining the

			QCC of Thermal Resources will be available to the resource owner. Aggregated QCC values for Thermal Resources and Long Duration Storage will be available to all Participants.
	~~Storage Hydro~~	~~Storage Hydro QCC Methodology~~	~~QCC values by Month for all Storage Hydro Resources.~~
	ROR	Historical Performance	QCC values by Month. Aggregated QCC values will be available to all Participants.
	Hybrid Resources	"Sum of Parts"	QCC values by Month. Aggregated QCC values will be available to all Participants.
	Customer Resources	Determined by Resource type	QCC values by Binding Season for customer-side resources. QCC values for all customer-side resources will be available to all Participants. Calculations for determining the QCC of customer-side resources will be available to the resource owner.

3.7. Board Approval of FSPRM

The adopted FSPRM values for each Month of a Binding Season are those approved by the Board of Directors. No later than nine months before the FS Deadline for such Binding Season, the Board of Directors shall take its final action regarding approval of the FSPRM values for each Month of such Binding Season. The Program Operator and Program Administrator will provide to the Board of Directors the study scope documentation prior to conducting the LOLE and ELCC studies.

WESTERN POWERPOOL

Western Resource Adequacy Program

102 Forward Showing Reliability Metrics

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
102	0.1	RAPC Glance Version	Michael O'Brien	1/18/2024
102	0.2	Public Comment Version	Michael O'Brien	1/19/2024
102	0.3	RAPC & PRC Discussion	Michael O'Brien	2/14/2024
102	0.4	RAPC Endorsement	Michael O'Brien	7/11/2024
102	0.5	Board Consideration	Michael O'Brien	9/13/2024
102	1.0	Board Approved	Rebecca Sexton	9/19/2024
102	1.1	Expedited Proposal	Rebecca Sexton	12/10/2025
102	2.0	Annual BPM Review	Maya McNichol	

Table of Contents

102 Forward Showing Reliability Metrics

1. Introduction

The Forward Showing Reliability Metrics Business Practice Manual (BPM 102) provides an overview of how the Program Operator will conduct the Loss of Load Expectation (LOLE) Study and set the Monthly FS Planning Reserve Margins (FSPRM) to be approved by the Board. In addition to the guidance provided in this BPM, the Program Operator will provide scoping documents with additional technical details on the modeling approach prior to conducting the LOLE Study each year.

1.1 Intended Audience

BPM 102 is intended for WRAP Participants and other interested individuals or entities and will be particularly useful for individuals that are responsible for their Participant organization's Forward Showing Submittal or that need to ensure their organizations are submitting the required MW quantity of Qualifying Resources to meet the Forward Showing Capacity Requirement. BPM 102 will be most informative to individuals in Participant organizations that have an interest in the LOLE Study and the setting of FSPRMs. Qualifying Capacity Contribution (QCC) methodologies - such as Effective Load Carrying Capability (ELCC) for Variable Energy Resources (VER) and Unforced Capacity (UCAP) for thermal resources - can be found in *BPM 105 Qualifying Resources*.

1.2 What You Will Find in This Manual

BPM 102 provides details, assumptions, methodologies, and procedures for conducting the LOLE Study and determining Monthly FSPRMs. This BPM explains how the Program Operator models variations in load and variations in generation, how numerous scenarios of variations in weather and variations in resource performance and outages are simulated from historical data, the Load and Resource Zones used in the LOLE Study simulations, the Subregions for which potentially differing FSPRM values are studied, how Contingency Reserves (CR) are accounted for, how the LOLE threshold is identified, how the simulations are conducted, and how FSPRMs are calculated.

1.3 Purpose

BPM 102 details the components of the LOLE Study and how the Program Operator will determine the FSPRMs in the LOLE Study for the Binding Seasons.

1.4 Definitions

All capitalized terms that are not defined in BPM 102 have their meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 102 are defined here, including by reference to another BPM where such term is defined.~~

Capability Test: As defined in *BPM 105 Qualifying Resources.*

Change Request Form: As defined in *BPM 301 Program Review Committee Workplan Development and Approval*.

Fuel Type: As defined in *BPM 105 Qualifying Resources.*

Historical Load Data: As defined in *BPM 101 Advance Assessment.*

LOLE Study: A probabilistic simulation of variations in load and variations in generation to determine the amount of capacity needed for each Month of a Binding Season to meet the no more than a single event-day of loss of load in ten years reliability metric across a Binding Season.

Net Generating Capability: As defined in *BPM 105 Qualifying Resources.*

Regional P50 Peak Load Forecast: Forecast based on total Participant load in the WRAP Region or total Participant Load in a Subregion depending on results being sought.

Study Scope Document: a document that defines the scope of an LOLE Study.

2. Background

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season (as calculated per Section 8). The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated in the LOLE Study using probabilistic analysis (see Section 7), taking into account variability in load (see Section 5) and variation in generation (see Section 6) while maintaining Contingency Reserves (see Section 6.10).

The Tariff provides that the FSPRM determination employs:

i. a simulated resource stack using capacity accreditation principles consistent with those used for WRAP QCC determinations (see Section 6);

ii. an adjustment in the total WRAP-required QCC value as needed to meet a one event-day in ten years LOLE across a Binding Season (see Section 8), and

iii. a standard that each Month will have at least 0.01 annual LOLE (i.e., one event-day in 100 years), while maintaining the overall one event-day in ten years LOLE across a Binding Season (see Section 8).

FSPRMs are determined for each Month of the Binding Season and for each Subregion (see Section 4.1) as well as the WRAP Region as a whole (see Section 4.1.1) in connection with the Advance Assessment. The timing and deadlines for data collection and study completion for the Advance Assessment can be found in *BPM 101 – Advance Assessment Timeline.* The LOLE Study will be defined by a Study Scope Document (see Section 3).

3. Study Scoping Process

The LOLE Study for each Binding Season ~~that is the subject of a Forward Showing~~ will be preceded by a Study Scope Document that will define the scope of work. The Study Scope Document will adhere to applicable Tariff requirements and the further guidance and implementing details described in BPM 102. The Study Scope Document may also specify additional technical details as necessary to complete the applicable LOLE Study for the subject Binding Season. The Program Operator will provide the Board and RAPC a timely opportunity to review and comment upon the Study Scope Document prior to the Program Operator's commencement of the applicable LOLE Study and will highlight any notable changes in scope or methodology compared to prior LOLE Studies. In addition to other key study methodologies and assumptions, the Study Scope Document will identify the planning software or system modeling software to be utilized for the subject LOLE Study.

4. Load and Resource Zones

The WRAP Region will be modeled in each LOLE Study as divided among the separate load and resource zones (LRZs) shown below in Figure 1, in order to consider weather variability across the WRAP Region and within Subregions. LRZs will be used primarily to distinguish weather modeling for loads and associated resources. To that end, the LOLE Study will not limit the import and export capabilities between LRZs when determining the FSPRMs for the WRAP Region or within Subregions. Changes to the LRZs shown in Figure 1 will be as noted in the Study Scope Document for the Binding Season to which such changes will apply.

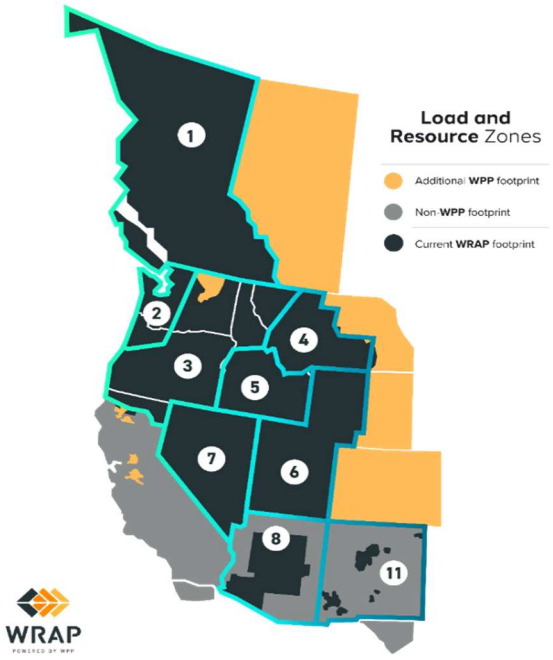

Figure 1 - WRAP Load and Resources Zones (LRZs)[1] as listed in Section 4.1

4.1 Subregions Used for Determination of Monthly FSPRMs

Two Subregions have been identified in the WRAP Region: the Northwest Subregion and the Southwest and East Subregion. LOLE Study simulations are conducted separately for each of the Subregions. Each Subregion is comprised of load and generation from within certain Balancing Authority Areas, and the boundaries of each Subregion are defined by the boundaries of the combined area of the component Balancing Authority Areas. The component Balancing Authority Areas for each Subregion are as follows:

- Northwest Subregion (Zones 1, 2, 3, 4)
    - Avista Corporation
    - BC Hydro and Power Authority[1]
    - Bonneville Power Authority
    - Chelan County PUD #1
    - Douglas County PUD #1
    - Grant County PUD #2

[1] The WRAP Region is solely located within the United States of America, and any transactions required by the WRAP Operations Program associated with loads or resources located in Canada are effected inside the borders of the United States.

  - NorthWestern Energy
  - PacifiCorp West
  - Portland General Electric
  - Puget Sound Energy
  - Seattle City and Light
  - Tacoma Power

- Southwest and East Subregion (Zones 5, 6, 7, 8, 11)

  - Arizona Public Service
  - Basin Electric
  - Black Hills
  - Idaho Power Company
  - NV Energy
  - PacifiCorp East
  - Public Service Company of New Mexico
  - Salt River Project

Beginning with the Winter 2027–2028 Binding Season, the LOLE Study to determine the FSPRM values will reflect the following, updated Balancing Authority Areas for the Northwest Subregion and Southwest and East Subregion, respectively:

- Northwest Subregion (Zones 1, 2, 3, 4, 5)

  - Avista Corporation
  - BC Hydro and Power Authority[1]
  - Bonneville Power Authority
  - Chelan County PUD #1
  - Douglas County PUD #1
  - Grant County PUD #2
  - Idaho Power Company
  - NorthWestern Energy
  - PacifiCorp West
  - Portland General Electric
  - Puget Sound Energy
  - Seattle City and Light
  - Tacoma Power

- Southwest and East Subregion (Zones ~~5~~, 6, 7, 8, 11)

  - Arizona Public Service
  - Basin Electric
  - Black Hills
  - NV Energy
  - PacifiCorp East

- Public Service Company of New Mexico
- Salt River Project
- Tucson Electric Power

Any load for which a Participant is responsible (that has not been excluded – see *BPM 103 Forward Showing Capacity Requirement*) that does not reside within one of the Balancing Authority Areas listed above will be added to one of the Subregions.

In the event a significant change to the transmission system is identified (e.g. new transmission capacity, changes in transmission rights ownership), the boundaries of the Subregions above may be reconsidered. A Participant may:

1. Request the Program Administrator conduct analysis of the potential impact of the change to the Subregion. The Program Administrator will take input from the requesting Participant and will determine the appropriate form and focus of such analysis. As possible, this analysis will be made public, in accordance with confidentiality guidelines set out in the Tariff.

2. File a Change Request Form (see *BPM 301 Program Review Committee Workplan Development and Approval*) requesting the Balancing Authority Area within which some portion of its load (for which it is the LRE) be reassigned to another Subregion.

    a. Following submission of the Change Request Form, other Participants with loads within the identified Balancing Authority Area will be given 30 days to provide comment. Any comments received will be added to the Change Request Form as appendices.

    b. Following the comment period in step 2a, the Change Request Form will be treated as a Non-Task Force Proposal (see *BPM 301*).

    c. Such Change Request Forms must be submitted at least 9 months prior to the deadline for the Advance Assessment Data Request for the Binding Season such change is requested (see *BPM 101 Advance Assessment*). For example, if a change to Subregion boundaries is requested for Summer 2032, the Advance Assessment Data Request for Summer 2032 is due March 1, 2030, so such a request would need to be submitted by June 1, 2029.

A new Participant will be assigned by WPP to an appropriate Subregion (and thus modify the boundary thereof) subject to objection of the RAPC to such assignment,

expressed by action of the RAPC. During the Transition Period, the Program Administrator may include in the Advance Assessment new participants committed to binding participation in the season being studied

4.1.1 WRAP Region Analysis

In addition to the Subregion analyses, WRAP Region FSPRMs will be determined by running LOLE Study simulations on the entire WRAP Region with unconstrained transmission (i.e., assuming no transmission constraints) between the Subregions.

5. Load Modeling in the LOLE Study

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season. The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated in the LOLE Study using probabilistic analysis (see the Study Scope Document for further details), taking into account variability in load (as well as variations in generation – see Section 6). For each Winter Season and each Summer Season, the Program Operator will model the effects of weather variability by developing a minimum of forty historical weather years that reflect the impact of weather on load. To model the effects of weather variability on load, a load shape provided by Participants for recent years (e.g. five most recent years of Historical Load Data) will be combined with historical weather data to synthesize at least forty years of synthetic historical weather data. Relationships between weather observations and load will be developed based on the historical weather and Historical Load Data (see *BPM 101 Advance Assessment* and *BPM 103 FS Capacity Requirement*) from recent data sets. The historical weather data will consist of hourly temperature data from a representative selection of weather stations in each Subregion. Weather data will be used from a back-up weather station if there are data quality issues for some periods in an initially selected station. The Study Scope document will identify when synthesized load shapes will be redetermined by the Program Operator; frequency of such updates will consider factors such as changes in load patterns, sharp increases in load due to large new customers, or changes in climate.

Other inputs into historical weather data will include an hour-of-week factor (in determining temperature-to-load comparisons for daylight hours versus darkness hours, as well as weekends versus Business Days) as well as temperature and average temperatures from the preceding eight, 24, and 48 hours. Different weather and load relationships will be built for the Winter Season and Summer Season. These weather and load relationships will be applied to the multiple years of weather data to develop

synthetic load shapes for the study years. Equal probabilities will be given to each of the forty annual load shapes in the simulations.

6. Generator Modeling in the LOLE Study

The FSPRMs are the capacity margins above a Participant's monthly P50 Peak Load Forecast required to meet the reliability metric of no more than a single event-day of loss of load in ten years across a Binding Season. The LOLE Study will simulate the aggregated stack of Qualifying Resources provided to the Program Operator by Participants in the Advance Assessment data collection, using the methodologies described below. In summary, the LOLE Study will model:

- The qualifying capacity of thermal resources based on Net Generating Capability (interchangeable with ICAP for thermal resources) taking into account equivalent forced outage rate-demand (EFORd) (see Section 6.1); note that EFORd is different than the equivalent forced outage factor during Capacity Critical Hours (EFOFcch) used to determine thermal resource QCC (see Table 1).
- QCC values for Storage Hydro (see Section 6.2)
- Participants' wind Qualified Resources as a single wind resource per LRZ using historical and synthesized resource performance profiles (see Section 6.3)
- Participants' solar Qualified Resources as a single solar resource per LRZ based on solar profiles developed from weather data (see Section 6.4)
- Energy Storage Resources (ESRs) as dischargeable only when there is a lack of other Qualified Resources available to serve load (see Section 6.5)
- Participants' Run-of-River (ROR) Qualified Resources as a single ROR resource per LRZ, using historical and synthesized resource performance profiles (see Section 6.6)
- Demand Response (DR) with properties provided by Participants (see Section 6.7)
- Dispatchable and controllable behind-the-meter Qualified Resources as equivalent sized resources (see Section 6.8)
- Capacity transactions resulting in either a net import or net export from the WRAP Region as hourly generators in the applicable LRZ (see Section 6.9)

- Contingency Reserves so as to maintain the required amounts (see Section 6.10).

The total amount of monthly qualifying capacity needed to meet the reliability metric will be simulated as a resource stack in the LOLE Study using probabilistic analysis, taking into account variations in generation (as well as load – see Section 5). The monthly Qualifying Resource simulated capacities (in MWs) needed to meet the reliability metric each month will then be converted to unforced capacity (UCAP) values (see Section 8) to calculate the FSPRMs (as a percentage).

6.1 Thermal Generator Modeling

~~Thermal generators~~ Thermal Resources or Long Duration Storage Resources will be modeled in the LOLE Study at their Net Generating Capability value (as indicated by the Capability Test – see *BPM 105 Qualifying Resources*) while forced outages for each resource will be modeled in accordance with their EFORd when determining the amount of monthly qualifying capacity to meet the reliability metric.[2] The Capability Test data will be provided by each Participant in its FS Submittal as discussed in *BPM 105 Qualifying Resources and BPM 108 FS Submittal Process*. All ~~thermal resources~~ Thermal Resources or Long Duration Storage Resources will be modeled in the LOLE Study, unless information provided by the relevant Participant in the Advance Assessment Data Request indicates the resource will not be available in the study period, such as a retirement date, future in-service date, or similar reason.

Forced outage modeling for ~~thermal resources~~ Thermal Resources or Long Duration Storage Resources will use annual EFORd values (based on the EFORd equation as defined by NERC GADS[3]), forced outage durations, and outage events sourced from NERC GADS (or equivalent) data provided by Participants. For Thermal Resources or Long Duration Storage Resources ~~thermal resources~~ that do not submit such data, an average forced outage rate will be applied based on size, technology type, Fuel Type and resource age. At a minimum, the most recent five years of historical NERC GADS (or equivalent) data will be considered in the LOLE Study. The models will be updated every Year to reflect the latest outage rates.

[2] Note: Resource EFORd is used in LOLE Study for determination of FSPRMs, and differs from the EFOF (Equivalent Forced Outage Factor) used for the determination of QCC for thermal resources during Capacity Critical Hours (CCHs) – see *BPM 105 Qualifying Resources*.

[3] NERC, 2023 GADS Data Reporting Instructions, January 2023, Appendix F, p9, Section 25, available at; GADS_DRI_2023.pdf (nerc.com)

, Planned outages for thermal resources will not be modeled in the LOLE study. All ~~thermal resources~~ Thermal Resources or Long Duration Storage Resources will be modeled as available at any given hour if the Qualifying Resource is not on a forced outage.

6.2 Storage Hydro Qualifying Resources

The LOLE Study will model Storage Hydro Qualifying Resources utilizing the Monthly QCC values determined with the methodology described in *BPM 105 Qualifying Resources* for such resources. The methodology utilized to assess QCC values for Storage Hydro Qualifying Resources accounts for the availability of storage such that it is appropriate in the LOLE modeling to assume the facility can output the Monthly QCC value for each hour in the LOLE Study. No additional outage modeling will be applied to the Storage Hydro Qualifying Resources in the LOLE Study, since the QCC values consider historical outages.

6.3 Wind Resources

Wind resources provided by Participants will be modeled together as a single wind resource per LRZ in the LOLE Study. Operational wind data (preferred and used when available) and synthesized wind data will be utilized for the analysis: recent historic wind resource performance is correlated to the corresponding peak load profiles so that synthesized wind performance data can be developed from similar load profiles in earlier years for use in the resource variability simulations. For example, actual historical resource performance profiles from a recent period (e.g., 2014-2020) are taken, and the load profiles for those days are matched with daily load profiles (+/-25 days) from older years (e.g., 1980-2014) that best align with the peak load profile of the day in question. Actual resource output will be used when available. The Program Operator will identify in the Study Scope Document whether synthesized wind shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. Wind resources provided that have not gone through the above synthetization process will use wind operational and synthesized data that is similar (i.e. the same LRZ) as the resource being added.

6.4 Solar Resources

Solar resources provided by Participants will be modeled together as a single solar resource per LRZ in the LOLE Study. When operational solar data is unavailable, solar profiles for resources will be developed using irradiance and weather data that will be obtained for weather station sites for the years after 1998 from the National Renewable Energy Laboratory's (NREL) National Solar Radiation Database (NSRDB) Data Viewer. Data will be obtained from the NREL System Advisor Model (SAM) for each Year and

site to generate 8,760 hourly profiles. Profiles from 1980-1998 will be selected by using daily profiles from the day that best matches the peak load out of all the days +/- 3 days of the source day of the 7-year period from 1998 to the most current year. The Program Operator will identify in the Study Scope whether synthesized solar shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. Solar resources provided that have not gone through the above synthetization process will use previous solar operational and synthesized irradiance data that is similar (e.g. the same LRZ) as the resource being added.

6.5 Energy Storage Resources

ESRs will be modeled in the LOLE Study as energy limited devices that will charge and discharge in accordance with their equipment specifications. ESRs will be modeled to charge and discharge in a 'preserve reliability' mode, meaning that they will only be discharged when there is a lack of other resources available to serve load. ESRs will be discharged prior to Demand Response (DR) programs. ESRs will not be restricted to charging from co-located resources or in a hybrid configuration unless specified by the Participant.

6.6 Run of River Qualifying Resources

ROR Qualifying Resources provided by Participants will be modeled together as a single ROR per LRZ in the LOLE Study. Operational and synthesized ROR data will be utilized for the analysis. Recent historic ROR resource performance is correlated to the corresponding peak load profiles so that synthesized ROR resource performance data can be developed from similar load profiles in earlier years for use in the resource variability simulations. For example, actual historical ROR resource performance profiles from a recent period (e.g., 2014-2020) are taken, and the load profiles for those days are matched with daily load profiles (+/-25 days) from older years (e.g., 1980-2014) that best align with the peak load profile of the day in question. The Program Operator will identify in the Study Scope whether synthesized ROR shapes for years where historical data is insufficient or not available will be redetermined for the upcoming LOLE Study. ROR resources provided that have not gone through the above synthetization process will use previous ROR operational and synthesized river flow data that is similar (e.g. on the same river system) as the resource being added.

6.7 Demand Response Programs

The LOLE Study will include properties and values of DR programs provided by Participants. DR programs will be modeled ~~as equivalent flexible resources with high fuel costs~~, such that these representative resources would be dispatched last in the LOLE

Study to reflect DR operating scenarios. Forced outage rates will not be assigned to DR programs.

6.8 Behind-the-Meter Generation

Behind-the-meter generation reported by Participants as capacity resources that are controllable and dispatchable by the Participant will be modeled in the LOLE Study as generation (per the aggregation requirements in *BPM 105 Qualifying Resources*). These resources will be assigned parameters and forced outage information from equivalent-sized resources.

6.9 External Capacity Modeling

Any external capacity transactions that are supported by firm commitments in the Advance Assessment Data Request (see *BPM 101 Advance Assessment*) will be modeled as hourly generators in the applicable LRZ in the LOLE Study. External transactions include any firm capacity transactions from or obligations to non-participating entities external to the WRAP Region. If the transaction is a sale to a non-participating entity, it will be an export of capacity. If the transaction is a purchase from a non-participating entity, it will be modeled as an import of capacity; forced outage rates will not be assigned to these transactions.

6.10 Contingency Reserves Modeling

In accordance with standard BAL-002-WECC-3, Balancing Authorities (and Reserve Sharing Groups) and required to maintain a minimum CR amount that is equal to the greater of either:

i. the loss of the most severe single contingency or

ii. the sum of three percent (3%) of hourly integrated load and three percent (3%) of hourly integrated generation.

The LOLE Study will ensure all CR amounts are maintained during tallied loss of load events. To ensure this, the LOLE Study will assume an average six percent (6%) of the Regional P50 Peak Load Forecast CR requirement when determining the capacity requirements to maintain the one event-day in 10-year LOLE requirement.

7. LOLE Study

Once the capacity contributions of the components of the resource stack have been determined (see Section 6) the LOLE Study simulation will be performed for the Subregions and WRAP Region to determine the capacity needed each Month to meet the reliability metric.

The probabilistic LOLE Study will model load variability (i.e., one of the forty (or more) synthetic load shapes) for all hours of the Year and random forced outages for Qualifying Resources in the WRAP Region and Subregions during each hour of the study. The LOLE Study will count loss of load events (insufficient Qualified Resource capacity to meet load) during all hours of the Binding Season against the reliability metric of the no more than one event-day in ten-year LOLE across a Binding Season. Loss of load events that occur during hours outside of the Binding Season will not be considered.

If an LOLE Study simulation has excess capacity in a Binding Season, pure negative capacity (with no outage rate) will be added in all hours of the applicable Binding Season until the WRAP Region or any Subregion arrive at the no more than one event-day in ten years across a Binding Season reliability threshold. If an LOLE Study simulation has insufficient capacity in a Binding Season, pure positive capacity (with no outage rate) will be added in all hours of the applicable Binding Season until the WRAP Region or any Subregion reaches the no more than one event-day in ten years across a Binding Season reliability threshold. In addition, to ensure the amount of qualifying capacity is not leading to excessively low LOLEs, pure capacity will be adjusted to ensure that all Months of the applicable Binding Season have at least 0.01 day per Year LOLE in that given Month, while at the same time ensuring the LOLE for the entire Binding Season does not exceed 0.1 day per Year LOLE.

Once the reliability metric is achieved, the capacity requirement (as represented by the resource stack and pure capacity) for each Month of the Binding Season (by Subregions and WRAP Region) is converted to UCAP for calculation of the FSPRMs (see Section 8).

8. FSPRMs Calculations

The monthly capacity values of the resource stack that result from the LOLE Study simulation (see Section 7) will be replaced with UCAP values as indicated in Table 1. The intent of the UCAP approach is to represent Qualified Resources with respect to their availability.

Table 1 - Resource capacity value to calculate UCAP FSPRMs

Resource type	Conversion to UCAP Values
Thermal	The Net Generating Capability will be replaced by QCC values calculated by the Program Operator using the QCC methodology (see *BPM 105*)

Wind, Solar and ESR	Values for wind, solar, and ESR resources will be determined by using an ELCC analysis (see *BPM 105*). The capacity values attributed to wind and solar resources and ESRs will be consistent with the QCC values assigned to such resources in the QCC analysis (see *BPM 105*).
Storage Hydro	QCC values submitted by the Participants calculated using the Storage Hydro QCC methodology (see *BPM 105*).
Run-of-River Hydro	QCC values calculated by the Program Operator using the ROR QCC methodology (see *BPM 105*).
Demand Response	No conversion needed. Modeled maximum monthly capacity of all programs submitted by the Participants.
Pure Capacity adjustment to meet reliability metric	No conversion needed.

After the monthly capacity values of a resource stack are converted into UCAP values, the FSPRMs will be calculated separately for each Month of the Binding Seasons based on the Regional P50 Peak Load Forecast for each Month (Month also refers to a partial calendar month that is part of a Binding Season) as follows:

$$FSPRM\ (\%) = \frac{UCAP_{1-in-10} - Regional\ P50\ Load\ Forecast}{Regional\ P50\ Load\ Forecast} * 100$$

Where:

FSPRM(%) is the FSRPM for a specified Month in a Binding Season

UCAP$_{1\text{-}in\text{-}10}$ is the UCAP required to meet the reliability metric for a specified Month in a Binding Season

Regional P50 Peak Load Forecast is the P50 Peak Load Forecast for the specified Month

Regional P50 Peak Load Forecasts used in the above FSPRMs equation are distinct from Participant P50 Peak Load Forecasts used in the calculation of Participant FS Capacity

Requirements as described in *BPM 103 FS Capacity Requirement*. However, it should be noted that while Regional P50 Peak Load Forecasts are calculated using the same methodologies as Participant P50 Peak Load Forecasts the former use a Load Growth Factor specific to the LOLE Study (see *BPM 103 FS Capacity Requirement*).

WESTERN POWERPOOL

Western Resource Adequacy Program

103 Participant Forward Showing Capacity Requirements

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised by	Date
103	0.1	RAPC Glance Version	Michael O'Brien	5/28/2024
103	0.2	Public Comment Version	Michael O'Brien	5/30/2024
103	0.3	RAPC & PRC Discussion	Michael O'Brien	8/28/2024
103	0.4	RAPC Endorsement	Michael O'Brien	9/4/2024
103	0.5	Board Consideration	Michael O'Brien	9/12/2024
103	1.0	Board Approved	Rebecca Sexton	9/19/2024
103	2.0	2024-NTFP-4 Redlines	Michael O'Brien	3/13/2025
103	3.0	Annual BPM Review	Maya McNichol	1/6/2026

Table of Contents

103 Participant Forward Showing Capacity Requirements

1. Introduction

The Forward Showing (FS) Capacity Requirement is the minimum quantity of capacity a Participant is required to demonstrate for a Month of a Binding Season. Business Practice Manual (BPM) 103 describes the process for determining the components of the FS Capacity Requirement (the FS Planning Reserve Margin [FSPRM] calculations can be found in *BPM 102 Reliability Metrics*). BPM 103 also includes directions for a Participant seeking to exclude load from its FS Capacity Requirement, along with a discussion of the effect of using another Subregion's lower FSPRM on a Participant's FS Capacity Requirement, and considerations for load aggregation and disaggregation.

1.1. Intended Audience

BPM 103 is intended for WRAP Participants and other interested individuals or entities. BPM 103 will be particularly useful for those responsible for their Participant organization's FS Submittal as it pertains to meeting the FS Capacity Requirement, as this BPM provides an overview of the Monthly P50 Peak Load Forecast, load growth and load change considerations, and the Contingency Reserve Adjustment.

1.2. What You Will Find in This Manual

BPM 103 has the following sections: FS Capacity Requirement; P50 Peak Load Forecast; Load Growth Factor; Contingency Reserve Adjustment; Excluding Load; Submitting Loads from Multiple ; Load Aggregation/Disaggregation; and LOLE Study Load Forecast and Load Growth Rate. BPM 103 also includes Appendix A - P50 Peak Load Forecast Modifications and Appendix B - Load Exclusion.

1.3. Purpose

BPM 103 provides an overview of the components of the monthly FS Capacity Requirements calculations, including the Monthly P50 Peak Load Forecast methodology.

1.4. Definitions

All capitalized terms that are not defined in BPM 103 or another BPM have their meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff that are specific to BPM 103 are defined here, including by reference to another BPM where such term is defined.~~

Contingency Reserve Adjustment: An adjustment to the FS Capacity Requirement to account for changes in Contingency Reserve requirements resulting from a Participant's contractual purchases and sales that include the Contingency Reserve as a specific part of the contract. The Contingency Reserve Adjustment has two

components: Contingency Reserve Adjustment - Generation and Contingency Reserve Adjustment - Load.

Contingency Reserve Adjustment - Generation: The component of the Contingency Reserve Adjustment that accounts for differences between the system average Contingency Reserve requirement assumed in the LOLE Study and a Participant's actual purchases and sales.

Contingency Reserve Adjustment - Load: The component of the Contingency Reserve Adjustment that accounts for a Participant's specific Contingency Reserve purchases and sales.

Forward Showing (FS) Capacity Requirement Unadjusted: The FS Capacity Requirement Unadjusted takes into account the monthly P50 Peak Load Forecast and the monthly FSPRM. The FS Capacity Requirement Unadjusted does not take into account the Contingency Reserve Adjustment.

Historical Load Data: As defined in *BPM 101 Advance Assessment*.

Load Forecast Ratio: The Load Forecast ratio for each Month of a Binding Season is the ratio of the monthly average of the peak loads of a Month for the last five years to the maximum of the monthly average of the peak loads of the months of a Binding Season for the last five years.

Load Growth Factor: A program-wide load growth factor applied to P50 Peak Load Forecasts that may take into account location, weather, Participant type, and Participant customer composition (balance between retail, commercial, and industrial) among other factors.

LOLE Study: As defined in *BPM 102 FS Reliability Metrics*.

Regional P50 Peak Load Forecast: As defined in *BPM 102 FS Reliability Metrics*.

Seasonal Peak Months: The Winter Season months of December, January, and February.

2. Demand Response Utilization

A Participant has two options when choosing how to use Demand Response to affect its Monthly FS Capacity Requirements in its FS Submittal (see *BPM 108 FS Submittal Procedure*).

- Option 1: A Participant may leave the effects of its historically deployed Demand Response included in its Historical Load Data (see *BPM 101 Advance Assessment*). This will have the effect of reducing the amount of load in the LOLE Study (see *BPM 102 FS Reliability Metrics*), reducing maximum loads in the P50 Peak Load Forecast (see Section 4) ultimately leading to lower Monthly FS Capacity Requirements.
- Option 2: If a Participant removes the effects of historically deployed Demand Response from its Historical Load Data, the Participant may choose to utilize Demand Response as a Qualifying Resource (see attestation in *BPM 108 FS Submittal Procedure*). As described in *BPM 105 Qualifying Resources*, a Demand Response program registered as a Qualifying Resource will require a Capability Test to confirm the claimed capability and duration of load reduction, along with a more frequent Operational Test at a portion of the program's claimed capability and duration.

3. FS Capacity Requirement

The FS Capacity Requirement is the minimum quantity of capacity a Participant is required to demonstrate for each Month of a Binding Season in its FS Submittal (see *BPM 108 FS Submittal Process*). As shown in Equation 1, a Participant's FS Capacity Requirement begins with the Participant's monthly P50 Peak Load Forecast (see Section 4), which is multiplied by one plus the applicable Monthly FS Planning Reserve Margin (FSPRPM - see *BPM 102 FS Reliability Metrics*) for a Month (the net result is known as the FS Capacity Requirement Unadjusted). The Contingency Reserve Adjustment (see Section 6) is then added to the FS Capacity Requirement Unadjusted to arrive at a Participant's monthly FS Capacity Requirement.

Equation 1 – FS Capacity Requirement

$$\boldsymbol{FS\ Capacity\ Requirement} = \boldsymbol{FS\ Capacity\ Requirement\ Unadjusted} + \boldsymbol{Contingency\ Reserve\ Adjustment}$$

where

$$\boldsymbol{FS\ Capacity\ Requirement\ Unadjusted} = (P50\ Peak\ Load\ Forecast) * (1 + FSPRM)$$

and

$$\boldsymbol{Contingency\ Reserve}\ Adjustment = Contingency\ Reserve\ Adjustment\_Generation + Contigency\ Reserve\ Adjustment\_Load$$

4. P50 Peak Load Forecast

A Participant's monthly P50 Peak Load Forecast for the Binding Season is calculated to determine a Participant's FS Capacity Requirement Unadjusted. The monthly P50 Peak Load Forecast will be calculated using the following methodologies for the Winter Seasons (Section 4.1) and Summer Seasons (Section 4.2).

4.1. Winter P50 Peak Load Forecast

Example monthly P50 Peak Load Forecasts for a Winter Season is shown in Table 1 and referred to in the methodological steps below.

	Month	Season	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2023/2024 Monthly P50 Peak Load Forecast - unadjusted	2023/2024 Monthly P50 Peak Load Forecast - adjusted for load growth
	November	Winter	2098	1998	1899	1958	2468	1998	2042
Seasonal	December	Winter	2060	2206	2241	2202	2273	2448	2502
Peak	January	Winter	2363	2381	2239	2521	2302	2448	2502
Months	February	Winter	2448	2072	2213	2476	2477	2448	2502
	March	Winter	2070	2253	2047	1959	1806	2047	2093
		Maximum	2448	2381	2241	2521	2477		

Table 1 - Example Winter Season P50 Peak Load Forecast

1. Determine the peak load for each Month of the Winter Season for the last available five Winter Seasons using the Historical Load Data submitted as part of the Advance Assessment (see *BPM 101 Advance Assessment*). These are the load values populating the light blue section of Table 1 (e.g. November peak load from 2019/2020 is 1899 MW).
2. Calculate the maximum peak load for each of the last available five Winter Seasons. For example, the maximum peak load for 2020/2021 is 2521 MW.
3. The Monthly P50 Peak Load Forecast for the Seasonal Peak Months is the median of step 2 which in Table 1 is 2448 MW.
4. The Monthly P50 Peak Load Forecasts for November and March are the median of the respective load values from step 1, which in Table 1 are respectively 1998 MW and 2047 MW.

An example spreadsheet showing steps 1 through 4 is posted on the WPP website.

5. Per the Tariff, a Participant can modify the results of Step 1 to capture load changes during the forecast window and ensure the results of Step 3 and Step 4 are correct. If historical load data is available the affected Participants are responsible for adjusting any monthly peak loads in Step 1 that do not capture the load change. If

historical load data is unavailable (e.g., a new data center) the affected Participant is responsible for generating synthetic load data and adjusting any monthly peak loads in Step 1 that do not capture the load change. Amending the results of Step 1 will be necessary until the peak load for each Month of the Winter Season for the last available five Winter Seasons automatically fully capture the impacts of the load change through the Historical Load Data submitted as part of the Advance Assessment. A Participant will need to attest to the accuracy of any modification (see Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation). Additions and removals of load are separate and distinct from Load Growth Factors discussed in Section 5 and are intended to capture significant one-time changes such as the addition or loss of a large industrial customer.

6. Per the Tariff, a specified Load Growth Factor will then be applied to the results of step 5 (see Section 5) for each year following the last year in the Historical Load data. For example, the Monthly P50 Peak Load Forecast – unadjusted is multiplied by the Load Growth Factor once for 2022/2023 and again to arrive at the 2023/2024 Monthly P50 Peak Load Forecast – adjusted for load growth value in the last column in Table 2.

4.2. Summer P50 Peak Load Forecast

The monthly P50 Peak Load Forecast for the Summer Seasons utilizes a Load Forecast Ratio to reflect the potential for a Participant to experience peaks in different months of the Summer Season from year to year. An example monthly P50 Peak Load Forecast for a Summer Season is shown in Table 2 and referred to in the methodological steps below.

Month	Season	2018	2019	2020	2021	2022	Monthly Average of Peak Loads	Maximum Monthly Average of Peak Loads	Median of Maximum of Peak Loads for the last five Seasons	Load Forecast Ratio	2024 Monthly P50 Peak Load Forecast - unadjusted	2024 Monthly P50 Peak Load Forecast - adjusted for load growth
June	Summer	3071	3571	1903	2496	1957	2600	2960	3571	0.88	3136	3206
July	Summer	3672	1761	2434	3219	3715	2960			1.00	3571	3650
August	Summer	2049	2929	2661	2939	2347	2585			0.87	3119	3188
September	Summer	2308	1698	1880	1664	2443	1999			0.68	2411	2465
	Maximum	3672	3571	2661	3219	3715						

Table 2 - Example Summer Season P50 Peak Load Forecast

1. Determine the peak load for each Month of the Summer Season for the last available five seasons using the Historical Load Data submitted as part of the Advance Assessment (see BPM 101 Advance Assessment). These are the load values populating the light blue section of Table 2 (e.g. June peak load from 2020 is 1903 MW).

2. Calculate the maximum peak load for each of the last available five seasons. For example, the maximum peak load for 2021 in the yellow section of Table 2 is 3219 MW.
3. Calculate the median of step 2, which in Table 2 is 3571 MW.
4. Calculate the Load Forecast Ratio.
   4.1. For each of the last available five Summer Seasons calculate the average of the five peak loads for each Month. For example, in August in Table 2 the average of the peak loads is 2585 MW.
   4.2. Identify the maximum load value from step 4.1. In the example shown in Table 2 this is the July average of 2960 MW.
   4.3. The Load Forecast Ratio for each Month of the Summer Season is the result of step 4.1 divided by the MW value identified in step 4.2. In the example shown in Table 2, this is 1.00 for July (and will always by 1.00 for the maximum Summer month) and 0.68 for September.
5. Multiply the Load Forecast Ratios for each Month of the Summer Season from step 4.3 by the result of step 3. These are the Monthly P50 Peak Load Forecast values unadjusted for load growth or load additions/removals (seen in red in Table 2). In the example shown in Table 2 the Monthly P50 Peak Load Forecast - unadjusted value for September is 2411 MW (0.68 multiplied by 3571 MW).

An example spreadsheet showing steps 1 through 5 is posted on the WPP website.

6. Per the Tariff, a Participant can modify the results of Step 1 to capture load changes during the forecast window and ensure the results of Step 5 are correct. If historical load data is available the affected Participants are responsible for adjusting any monthly peak loads for in Step 1 that do not capture the load change. If historical load data is unavailable (e.g. a new data center) the affected Participant is responsible for generating synthetic load data and adjusting any monthly peak loads in Step 1 that do not capture the load change. Amending the results of Step 1 will be necessary until the peak load for each Month of the Summer Season for the last available five season automatically fully capture the impacts of the load change through the Historical Load Data submitted as part of the Advance Assessment. A Participant will need to attest to the accuracy of any modification (see Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation). Additions and removals of load are separate and distinct from Load Growth Factors discussed in Section 5 and are intended to capture significant one-time changes such as the addition or loss of a large industrial customer.
7. Per the Tariff, a specified Load Growth Factor will then be applied to the results of step 6 (see Section 5) for each year following the last year in the Historical Load Data. For example, the Monthly P50 Peak Load Forecast – unadjusted is multiplied by the Load Growth Factor once for 2023 and again to arrive at the 2024 Monthly

P50 Peak Load Forecast – adjusted for load growth value in the last column in Table 2).

5. Load Growth Factor

A Participant will have the option of using either a WPP-established WRAP-wide growth rate(s) (Section 5.1) or developing its own alternative growth rate (Section 5.2). Load growth is separate and distinct from the additions and removals of load discussed in Section 4.1 step 5 and Section 4.2 step 6.

5.1. Established Growth Rate

A WRAP-wide established growth rate (or set of established growth rates) may account for location, weather, Participant type, Participant customer composition (balance between retail, commercial, and industrial). The established growth rate is currently set at 1.1%. Changes to the established growth rate for the P50 Peak Load Forecast in BPM 103 will be reviewed, endorsed, and approved as described in the *BPM 300's Stakeholder Engagement* series.

5.2. Participant Alternative Growth Rate

If a Participant believes the established growth rate discussed in Section 5.1 does not accurately represent its anticipated loads in the Binding Season, the Participant may request an alternative growth rate that will be validated by the Program Administrator and Program Operator (using the form found on WPP website). The Program Administrator will consider the data presented in support of the Participant's request for an alternative growth rate, which could potentially relate to weather, economic growth, or climate. As part of the request, the Participant will demonstrate that the alternative growth rate (applied to each year following the last year in the Historical Load Data) results in a P50 Peak Load Forecast that is (in total) 5% higher or lower than the P50 Peak Load Forecast calculated using the growth rate in Section 5.1 in the Month of the Binding Season with the highest P50 Peak Load Forecast. For example, the Participant with data from Table 1 would provide an alternative load growth factor that, when applied for two years of growth, results in a P50 Peak Load value of greater than 2,627MW or less than 2,377MW for December, January, or February, and would provide supporting information for said load growth factor.

6. Contingency Reserve Adjustment

As discussed in *BPM 102 FS Reliability Metrics*, the LOLE Study and resulting monthly FSPRMs ensure Contingency Reserve is maintained by assuming a proxy Contingency Reserve requirement of six percent (6%) of the Regional P50 Peak Load Forecast across the WRAP Region. However, as the BAL-002-WECC-3 standard requires a reserve equal to three percent (3%) of hourly integrated load and three percent (3%)

of hourly integrated generation, the individual Participants' Contingency Reserve requirements (and therefore FS Capacity Requirements) will be different depending on the load and generation profiles specific to them. For instance, some Participants may utilize contracted capacity to meet their FS Capacity Requirement where the seller, through a contractual arrangement, is responsible for carrying the Contingency Reserve obligation of contracted capacity, or some Participants may purchase Contingency Reserve to cover some or all of their Contingency Reserve requirements. These are categorized as Contingency Reserve adjustments and the intent is to ensure that the portion of the FSPRM attributable to Contingency Reserve is included in the FS Capacity Requirement of the LRE with the actual responsibility, whether that responsibility is driven by a BAL-002 WECC-3 compliance obligation or through a contractual arrangement. The FS Capacity Requirements Unadjusted are therefore adjusted for a Participant's Contingency Reserve requirements (plus or minus). A Participant's Contingency Reserve Adjustment has two components: Contingency Reserve Adjustment-Generation and Contingency Reserve Adjustment-Load.

6.1. Contingency Reserve Adjustment-Generation

A Participant's sale or purchase of capacity where there is an accompanying contractual transfer of obligation for Contingency Reserve may impact the amount of Contingency Reserve needed in the Participant's FS Submittal.

Participants selling capacity that is utilized to meet another Participant's FS Capacity Requirement will get a positive value for the Contingency Reserve Adjustment-Generation, meaning the Participant will demonstrate additional capacity to cover Contingency Reserve for the generating resources serving the export contracts. Participants meeting some or all of the FS Capacity Requirement with contracts where the seller carries the Contingency Reserve obligation will have a negative Contingency Reserve Adjustment-Generation, meaning the Participant demonstrated less capacity, as the seller is carrying the Contingency Reserve for the resources serving the contract(s).

Exceptions to the aforementioned are possible when contractual arrangements dictate alternative treatment as indicated in the workbook.

6.2. Contingency Reserve Adjustment-Load

For a Participant with Contingency Reserve contracts, the Participant's Contingency Reserve Adjustment-Load is the net of the Participant's sales of such contracts less purchases for each Month of a Binding Season.

If a Participant is a net seller of Contingency Reserve contracts to a Participant assumed to have a Contingency Reserve obligation on its WRAP load, it will carry additional

Contingency Reserve to cover such contracts (with a positive Contingency Reserve Adjustment-Load). If a Participant is a net purchaser of Contingency Reserve contracts, it will carry fewer Contingency Reserve (having contracted away the obligation), resulting in a negative Contingency Reserve Adjustment-Load.

7. Excluding Load

As described in *BPM 108 FS Submittal Process*, a Participant will include all loads in its FS Demonstration for which it is responsible: i.e. all loads within the Western Interconnect (that are not participating in another resource adequacy program or represented by another WRAP LRE) for which the Participant has an obligation to forward procure capacity to meet any portion of the load or for which the Participant is the exclusive wholesale electricity provider to a load serving entity.

A Participant may seek to exclude loads from WRAP participation. This is distinct from a Participant modifying its P50 Peak Load Forecast to account for additions and removal of load. This is distinct from a Participant modifying its P50 Peak Load Forecast to account for additions and removal of load. As part of its FS Demonstration, the Participant will attest that the Participant is not the exclusive wholesale provider for the load (see Appendix B - Load Exclusion). As part of its FS Demonstration, the Participant will also provide documentation of notice to the end-use customer of the Participant's intent to exclude the load from WRAP in the form provided on the WPP website and acknowledged via signature by a senior official of the end-use customer. Excluded load may not be included in the Operations Program. Excluded load must be separately metered, such that the excluded load may be removed from load forecasting information to be provided in the Operations Program, as further discussed in *BPM 202 Participant Sharing Calculation Inputs*, and from the Historical Load Data utilized in Section 4. Loads may not be partially excluded.

8. Submitting Loads from Multiple Subregions

As described in *BPM 108 FS Submittal Process*, a Participant responsible for loads in two Subregions seeking to submit a single workbook using one monthly FSPRM may do so if the Participant can demonstrate NERC Priority 6 or NERC Priority 7 firm point-to-point (PTP) transmission service or network integration transmission service (NITS) from the load in the Subregion with the utilized monthly FSPRM to the load in the Subregion with the higher monthly FSPRM (see *BPM 108* for additional information). When submitting a single FS Submittal for loads in multiple Subregions, the Participant will use historical load data including all loads when calculating the FS Capacity Requirement for that Month according to Sections 2 through 7 of this BPM. Subregion loads will be combined

on a coincident peak basis to determine monthly P50 Peak Loads when submitting a single FS Submittal.

9. Load Aggregation/Disaggregation

As described in BPM 108 FS Submittal Process, all loads submitted by a Participant within a single FS Submittal must be able to be served interchangeably by all Qualifying Resources and Qualifying Contracts in that same FS Demonstration, without the expectation that additional transmission rights will be required to deliver resources to load. In accordance with this, a Participant may be required to submit separate FS Demonstrations, even as to loads residing in the same Subregion, if the Program Administrator determines it is not practicable to treat such loads as if they can share in load and resource diversity for reasons that may diminish the integrity of WRAP reliability metrics, including but not limited to, if loads and resources are not operated collectively.

10. LOLE Study Load Forecast and Load Growth Rate

A LOLE Study (see BPM 102 FS Reliability Metrics) is undertaken as part of the Advance Assessment (see BPM 101 Advance Assessment) to determine a Binding Season's monthly FSPRMs. The Regional P50 Peak Load Forecasts for the Binding Seasons in the LOLE Study are calculated using the same Participant P50 Peak Load Forecast methodologies outlined in Section 4. An LOLE Study-specific program-wide load growth rate is then applied to the results. The current Load Growth Factor for the LOLE Study is set to 1.1%. Changes to the established growth rate for the LOLE Study in BPM 103 will be reviewed, endorsed, and approved as described in the BPM 300's Stakeholder Engagement series.

Appendix A - P50 Peak Load Forecast Modifications Senior Official Attestation

I, the undersigned, who as [title], serves as a senior official of [Participant], hereby attest that the peak loads for each month of the Season for the last available five seasons have been modified accurately to the best of my knowledge and belief following due inquiry to account for discrete additions and removals of load planned to take place by the corresponding Months of the Binding Season, not to include speculative or estimated load growth, to ensure accurate Monthly P50 Load Forecast values included with this attestation. Also included with this attestation is a narrative description of the loads added and/or removed from the Monthly P50 Load Forecast, including their magnitude and applicable Months.

Appendix B - Load Exclusion Senior Official Attestation

I, the undersigned, who as [title], serves as a senior official of [Participant], hereby request that the [load identifier from FS Submittal] be excluded from [Participant's] P50 Load Forecast calculation. I attest that [Participant] is not the exclusive wholesale electricity provider for this load.

WESTERN POWERPOOL

Western Resource Adequacy Program

104 Determination of Capacity Critical Hours

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
104	0.1	RAPC Glance Version	Maya McNichol	1/17/2024
104	0.2	Public Comment Version	Maya McNichol	1/19/2024
104	0.3	RAPC & PRC Discussion	Maya McNichol	2/9/2024
104	0.4	RAPC Endorsement	Maya McNichol	2/20/2024
104	0.5	Board Approval	Maya McNichol	2/29/2024
104	1.0	Board Approved	Maya McNichol	3/7/2024
104	2.0	Annual BPM Review	Maya McNichol	

Table of Contents

104 Determination of Capacity Critical Hours

1. Introduction

The Capacity Critical Hours Business Practice Manual (BPM 104) describes the methodology for identifying the Capacity Critical Hours (CCH) for a given period (the "Capacity Critical Hours Methodology"). CCH are those hours when the Net Regional Capacity Need for the WRAP Region is expected to be above the 95th percentile, based on historic and synthesized data for the WRAP Region's gross load, variable energy resource performance, and interchange. CCH are used to help determine the capability of certain resource types during periods of highest system capacity need, in order to calculate the Qualifying Capacity Contribution (QCC) of such resources. CCH determination results in a single set of hours for the WRAP Region for the relevant period. Resources may vary in terms of whether they operate during the determined CCH, but all resources that use CCH in the QCC determination are assessed against the same common set of CCH for the region for the same relevant period.

1.1. Intended Audience

BPM 104 is intended for WRAP Participants and other interested individuals or entities. BPM 104 is particularly useful for those individuals that are responsible for determining CCH used in the development of QCC for resources.

1.2. What You Will Find in This Manual

BPM 104 describes the methodology for determining CCH.

1.3. Purpose

To provide an overview of CCH and the processes for determining the CCH for the WRAP Region.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 104 or another BPM have their meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff that are specific to BPM 104 are defined here.~~

Capacity Critical Hours Methodology: The methodology used to determine the hours where the net regional capacity need is above the 95th percentile (highest capacity need hours).

Historical Load Data: As defined in *BPM 101 Advance Assessment.*

Net Regional Capacity Need: The WRAP Region's net need for capacity during a given hour, as calculated in accordance with the procedure described in BPM 104.

Regional Interchange: The net aggregate interchange between all Balancing Authority Areas in the WRAP Region and all Balancing Authority Areas outside the WRAP Region over a given ten-Year period, as calculated in accordance with the procedure described in BPM 104.

Resource-Specific Capacity Agreement: as defined in *BPM 106 Qualifying Contracts*.

2. Background

CCH are those hours where the Net Regional Capacity Need of the WRAP Region is above the 95th percentile. CCH are used in the methodology to determine the QCC of storage hydro, thermal, run-of-river (RoR), non-dispatchable resources, and contracts (based on individual resource accreditation). CCH may differ from the peak load hours of the region, because CCH determination considers not only load of the WRAP Region, but also the performance of Variable Energy Resources (VERs), as well as the interchange across the footprint to arrive at a Net Regional Capacity Need:

Definition: Net Regional Capacity Need

$$\boldsymbol{Net\ Regional\ Capacity\ Need\ = Load - Wind - Solar - RoR + Regional\ Interchange}$$

where

Load is the aggregate Historical Load Data of all Participants in the WRAP Region in MW from the most recent ten-Year period,

Wind is the output of proposed and installed wind resources in MW for the most recent ten-Year period, including synthesized output for such period for resources that have fewer than ten years of output data;

Solar is the output of proposed and installed solar resources in MW for the most recent ten-Year period, including synthesized output for such period for resources that have fewer than ten years of output data;

Run-of-river (RoR) is the output of proposed and installed RoR resource in MW for the most recent ten-Year period, including synthesized output for such period for resources that have fewer than ten years of output data;

and

Regional Interchange is the modified interchange in MW for the most recent ten-Year period as calculated in accordance with the procedure described in Section 3.53.5.

Peak load hours, standing alone, are not the best indication of regional capacity need because hours of significant changes in resource performance or Regional Interchange can significantly affect the region's need for capacity. For example, while there may be instances of high loads during the month of June, there is also usually an abundance of RoR generation. Since the output from RoR resources must be used at the time of such output, higher RoR output could result in periods of excess capacity even while loads are generally high. Higher wind or solar output can have similar effects, particularly as wind and solar resources increase their share of the resource portfolio in the WRAP Region.

The following FS Program methodologies rely on the CCH methodology (see *BPM 105 Qualifying Resources*):

- Storage Hydro QCC methodology determination
- Thermal Resource QCC determination
- Run of River QCC determination
- QCC determination of contracts (see the resource accreditation of each contract)
- QCC determination of VERs
- QCC determination of non-dispatchable, must-take resources

3. Derivation of the Net Regional Capacity Need components

3.1. Load (Demand)

Each Participant is responsible for providing ten Years of Historical Load Data for their respective system in accordance with *BPM 101 Advance Assessment*. This data from each Participant will be compiled by the Program Operator to form the WRAP coincident peak load shape for the ten-Year period.

3.2. Wind Resource Output

Each Participant is responsible for providing the hourly generation profiles for the last ten Years from wind resources per *BPM 101 Advance Assessment* for their wind Qualified Resources and for wind resources in their Resource-Specific Capacity Agreements. Participants will also provide their prospective wind resources that are expected to be in service for the Year that is studied two Years ahead in the applicable Advance Assessment (see *BPM 101 Advance Assessment Timeline* for more information). The data from all Participant wind resources will be compiled by the Program Operator into an aggregate WRAP Region wind resource output for the ten-Year period.

For wind resources that have less than ten Years of output data, the Program Operator will complete the ten-Year period by using the synthesized wind output data that was developed for the same VER Zone in which the resource is located in the Loss of Load Expectation (LOLE) study (see *BPM 102 Forward Showing Reliability Metrics*) for the Binding Season at issue.

3.3. Solar Resource Output

Each Participant is responsible for providing the hourly generation profiles for the last ten Years from solar resources per *BPM 101 Advance Assessment* for their solar Qualified Resources and for solar resources in their Resource-Specific Capacity Agreements. Participants will also provide their prospective solar resources that are expected to be in service for the Year that is studied two years ahead in the applicable Advance Assessment. The data from all Participant solar resources will be compiled by the Program Operator into an aggregate WRAP Region solar resource output for the ten-Year period.

For solar resources that have less than ten Years of output data, the Program Operator will complete the ten-Year period by using the synthesized solar output data that was developed for the same VER Zone in which the resource is located in the LOLE study (see *BPM 102 Forward Showing Reliability Metrics*) for the Binding Season at issue.

3.4. Run of River Output

Each Participant is responsible for providing the hourly generation profiles for the last ten Years from RoR resources per *BPM 101 Advance Assessment* for their RoR Qualified Resources and for RoR resources in their Resource-Specific Capacity Agreements. Participants will also provide their prospective RoR resources that are expected to be in service for the Year that is studied two years ahead in the applicable Advance Assessment. The data from all Participant RoR resources will be compiled by the Program Operator into an aggregate WRAP Region RoR resource output for the ten-Year period.

For RoR resources that have less than ten Years of output data, the Program Operator will complete the ten-Year period by using the synthesized RoR output data that was developed for the same Subregion in which the resource is located in the LOLE study for the Binding Season at issue.

3.5. Regional Interchange

For the final component of Net Regional Capacity Need, i.e., Regional Interchange, the Program Operator aggregates and nets interchange data between Balancing Authority Areas in the WRAP Region and Balancing Authority Areas outside the WRAP Region. In

this term of the formula, a positive value indicates a net export position, and a negative value indicates a net import position. For the ten-Year analysis required for CCH determination, the Program Operator uses the previous ten Years of regional interchange data from publicly available U.S. Energy Information Administration data. If the historical record reveals a consequential change in the WRAP Region's interchange with other Balancing Authority Areas (potentially driven by increased demand, emerging markets, and other factors), the Program Operator will identify such a change and adjust the historical record of the Years before a consequential change, such that a ten-Year data set representative of current conditions (after the consequential change) of Regional Interchange data can be used in the analysis. Such a consequential change has been observed in 2018 and an example of adjustments is included in Appendix A.

3.5.1. Further Modifications to Interchange

Further modifications to the interchange shape will be made to account for market conditions that result in high export periods where the capacity that was exported may have otherwise been able to have been used for the benefit of the WRAP Region (had the program existed at the time). For example, if exports occurred during periods of excess capacity (e.g., high RoR output) within the WRAP Region, and the energy price outside of the WRAP Region was at typical market (or below market) prices, the capacity may not have been exported if the WRAP Region were to have a need for the capacity, as future conditions anticipate.

The following categories were created to evaluate these exports:

> *Economic sales:* made possible by excess generation in the WRAP Region; the Regional Interchange calculation assumes this capacity would have been available for the WRAP Region, had it been needed.
>
> *Scarcity sales*: in times of high market prices in areas outside of the WRAP Region, it was assumed that historical exports made during those time periods would not have been available, even if required by Participants.

In order to separate exports into the above two categories, energy market conditions were analyzed, and criteria were developed to determine whether exports may be economic sales or scarcity sales. The criteria are as follows:

- The market-clearing heat rate (price of power from Locational Marginal Price for the Day-Ahead Market at the TH_SP15_GEN-APND node divided by price of natural gas from SoCal daily gas price) for California was used as a proxy for external demand:

- For conditions when the heat rate is less than 10mmBTU/MWh, exports from the WRAP Region were determined available to the WRAP Region; export interchange was reduced to zero (imports were unchanged). This low level of heat rate indicates that market prices were not reflecting scarcity events and the exports were economic.
- For conditions when the heat rate is greater than 15mmBTU/MWh, exports from the WRAP Region were considered to be scarcity sales; accordingly, these values remained in interchange and were not used as a load modifier (imports were also unchanged). This higher heat rate is reflective of traditional peaking units, which are commonly operated and exported under scarcity conditions.
- For conditions when the heat rate was greater than 10 but less than 15, exports were linearly reduced from their values at 15 to zero based on the observed heat rate relative to 10 and 15.

In addition, starting in 2013, a carbon adjustment of the actual California Carbon Allowance cost for the applicable vintage year (dollars per MTCO2e), multiplied by the prevailing California Air Resources Board unspecified emissions rate for that year is applied to California market price before determining the market clearing heat rate.

For import transactions, it was assumed that these imports would continue to be brought into the WRAP Region regardless of market conditions.

4. Determining the CCHs

Once the data from Section 3 is collected and aggregated by the Program Operator, the Net Regional Capacity Need is calculated for each hour in the ten-Year period. Then the 95th percentile of the Net Regional Capacity Need for the ten-Year period is determined and each hour with a Net Regional Capacity Need greater than that 95th percentile value is designated as a CCH, and each hour with a Net Regional Capacity Need less than or equal to that 95th percentile value is not designated as a CCH.

CCH will be re-determined on an annual cycle in conjunction with the Advanced Assessment, as detailed in *BPM 101 Advanced Assessment*. The CCH will be posted on the Western Power Pool website.

Appendix A

An illustrative example for ten-Year periods that include Years prior to 2018 is included here for reference. The method for determining future regional interchange assumes that i) recent interchange shape from 2018 and after is most representative of future patterns and ii) interchange during the hour ending 19:00 (meaning 07:00pm PPT) has changed the least from the pre-2018 period, given the lack of solar resource output during that hour, such that hour ending 19:00 can serve as a benchmark for adjusting the interchange observed in ten-Year periods that include Years before 2018. Ten-Year periods that include Years before 2018 require an adjustment methodology, as illustrated in this section. For example, in 2021 the Program Operator developed Regional Interchange from interchange data for the Years 2010-2020, where 2018-2020 was the last three Years and 2010-2017 was the previous seven Years.

- Step 1 - The interchange for all hours prior to 2018 is averaged on an hourly basis. See regional interchange data below in Figure 1.

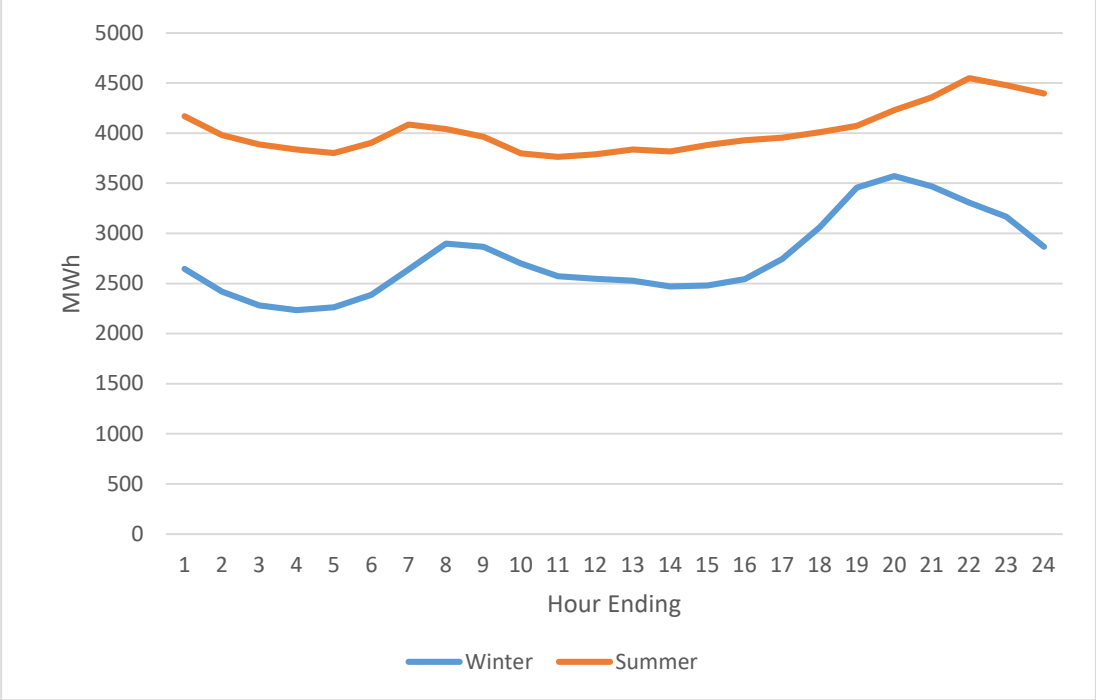

Figure 1. Raw regional interchange 2010-2017 – a relatively flat/consistent interchange profile for both seasons.

- Step 2 - The interchange for all hours including and after 2018 is averaged on an hourly basis. See regional interchange data below in Figure 2.

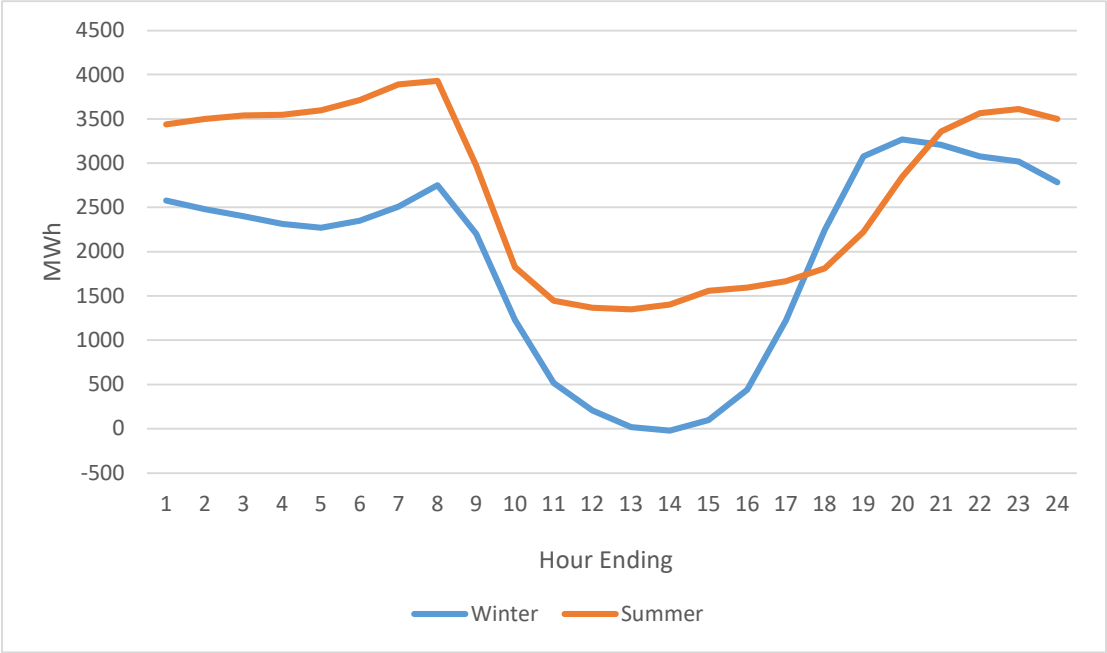

Figure 2. Raw regional Interchange 2018-2020 - declining daytime exports and peaks in morning and evenings. Roughly follows California solar production.

- Step 3 - The average interchange in hour ending 19 of 2018 and after is compared to all other hours of the hourly average interchange shape that was created using the hours before 2018. The difference of the averages is applied to the hourly average interchange for all ten Years.

  In the example here, hour ending 19 compared to each individual hour (see arrows on Figure 3 of these interchange values from the 2018-2020) was then applied to the hourly interchange of all Years in the ten-Year period (2010-2020).

  This results in a new hourly interchange shape for the entire ten-Year period.

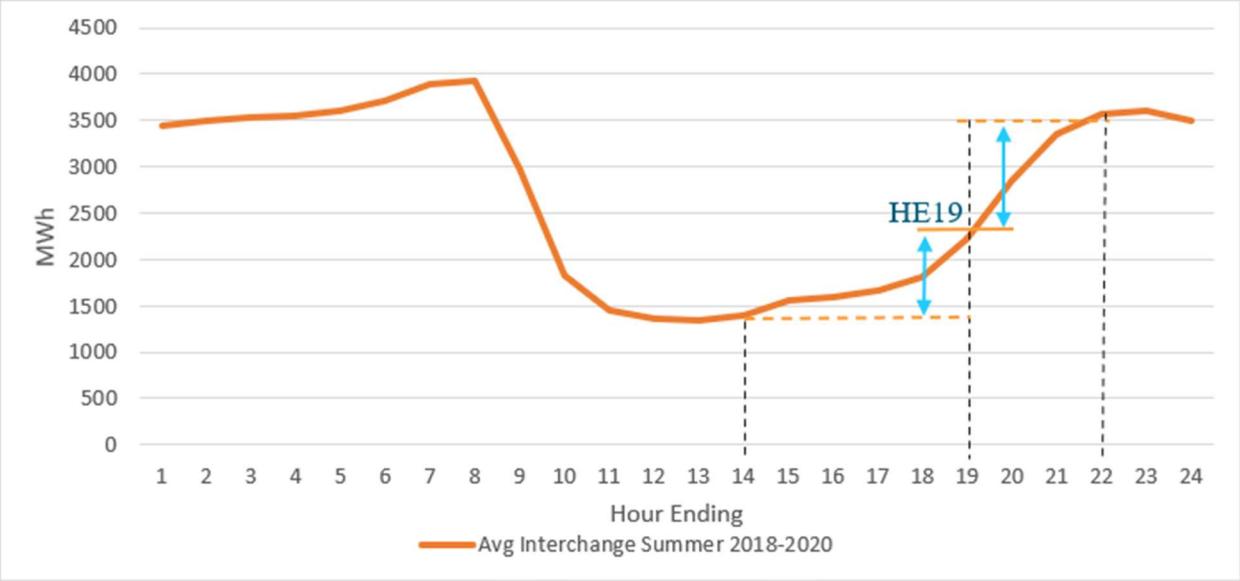

Figure 3. 2018-2020 hourly average loads were analyzed to determine appropriate offsets to apply to 2010-2017 load shapes.

Continuing the example, the results of the further modifications of the load shape described in this subsection resulted in the load shapes in Figure 4.

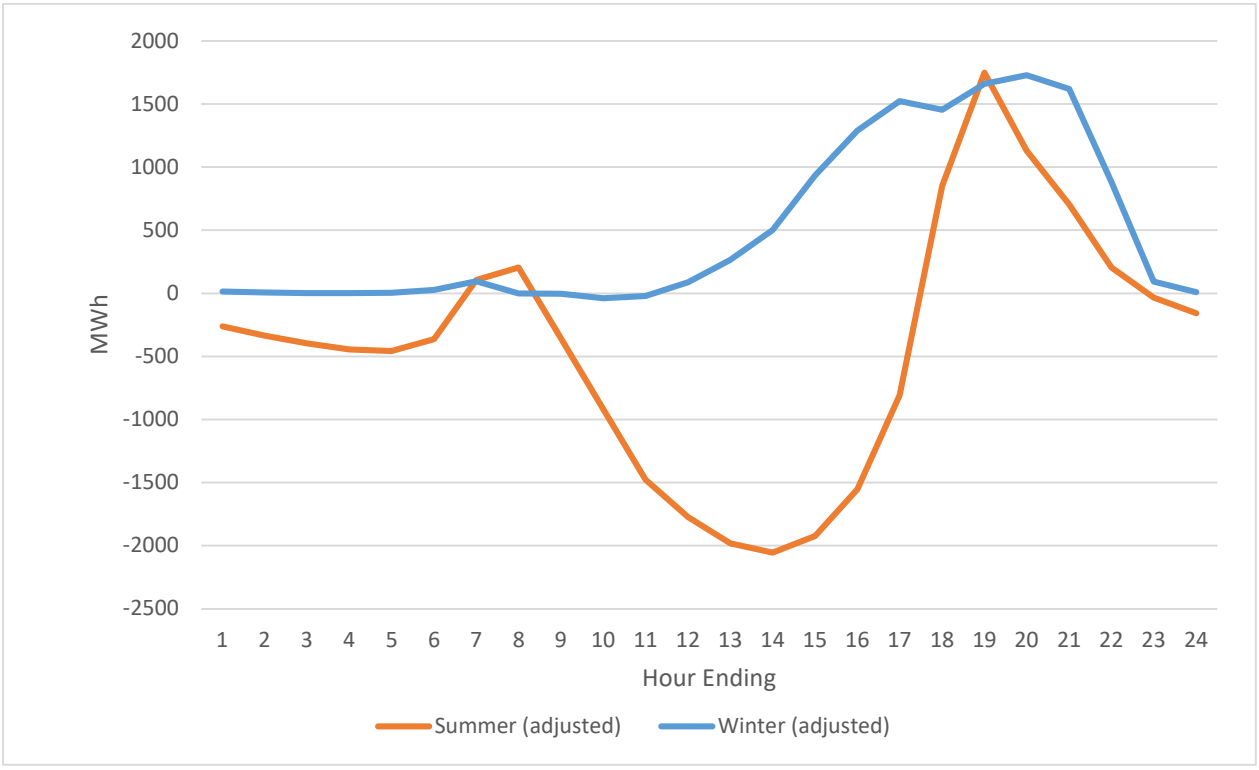

Figure 4. 2010-2020 interchange adjusted by CA heat rate analysis.

WESTERN POWERPOOL

Western Resource Adequacy Program

105 Qualifying Resources

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
105	0.1	RAPC Glance Version	Rebecca Sexton	5/9/2023
105	0.2	Public Comment Version	Rebecca Sexton	6/23/2023
105	0.3	RAPC & PRC Discussion	Rebecca Sexton	8/10/2023
105	0.4	RAPC Endorsement	Rebecca Sexton	8/11/2023
105	0.5	Board Consideration	Rebecca Sexton	8/17/2023
105	1.0	Board Approved	Rebecca Sexton	8/23/2023
105	1.1	2024-NTFP-2 Edits	Maya McNichol	3/13/2025
105	2.0	Annual BPM Review	Dave Zvareck	12/29/2025

Table of Contents

105 Qualifying Resources

1. Introduction

The Qualifying Resources Business Practice Manual (BPM) consists of two sections. The Resource Registration section outlines the processes for Participants to register their Qualifying Resources with the Program Operator to be included in the Advance Assessment to receive a Qualifying Capacity Contribution (QCC). The Qualifying Capacity Contribution of Resources section outlines the processes that the Program Operator will undertake to calculate QCC values for all registered Qualifying Resources.

1.1 Intended Audience

BPM 105 is intended for Western Power Pool (WPP) Western Resource Adequacy Program (WRAP) Participants and other interested individuals or entities. BPM 105 is particularly useful for those individuals that are responsible for their Participant organization's Forward Showing (FS) Submittal and need to ensure that their organization's Qualifying Resources are properly registered, will be included in the Advance Assessment, and will receive QCC values.

1.2 What You Will Find in This Manual

BPM 105 includes two separate Business Practices: 1) Resource Registration and 2) Qualifying Capacity Contribution of Resources.

1.3 Purpose

To provide an overview of resource registration and qualification processes and the process for determining the QCC for Qualified Resources.

1.4 Definitions

All capitalized terms that are not otherwise defined in BPM 105 have their meaning set forth in the Tariff. Any capitalized terms not found in the Tariff that are specific to BPM 105 are defined here.

Advance Assessment Data Request: As defined in *BPM 101 Advance Assessment.*

ASHRAE Rated Ambient Temperature: The ambient temperature employed for Capability Testing of a resource for the Summer Season, as determined for the resource location on a dry-bulb basis in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Fundamentals Handbook,[1] Climatic Design Information, Cooling and Dehumidification Design Conditions Appendix using the – "Cooling DB/MCWB 0.4%" values. If the resource is located within 30 miles of the nearest weather station reported in the Handbook, then the temperatures

[1] ASHRAE Fundamentals Handbook

employed for the Rated Ambient Temperature will be those reported for the nearest station. For all other resource locations, the Rated Ambient Temperatures shall be determined by interpolating between those reported for appropriate weather stations using the resource location's latitude and longitude.

Capability Test: The demonstration of capability of certain Qualifying Resources by generating at their rated capability under specified test conditions and test duration.

Cascaded Dual Plant: Two Storage ~~h~~Hydro Qualifying ~~generation r~~Resources that are on the same river systems and operated in a coordinated manner.

Cure Period: As defined in *BPM 108 Forward Showing Submittal Process*

Data Request Instruction Manual: As defined in *BPM 101 Advance~~d~~ Assessment*.

Fuel Type: A resource's primary fuel source, such as coal, natural gas, wind, or hydroelectric.

Hybrid Facility: A resource that is composed of two or more resources of different fuel or technology types where one of those resources is an Energy Storage Resource with the same interconnection point.

Hydro QCC Workbook: The workbook that determines the QCC of a ~~single~~ Storage Hydro ~~generation~~ resource(s).

Long Duration Storage: A resource designed to capture energy produced at one time for use at a later time, and capable of sustained delivery for over eight hours (such as pumped Storage Hydro facilities or thermal energy storage devices).

Net Generating Capability: The gross maximum output of a Qualifying Resource reduced by any power used for auxiliary power requirements demonstrated through a Capability Test. May be used interchangeably with Installed Capacity when referencing Thermal Resources.

Operational Test: The annual demonstration of the functional ability of a Qualifying Resource.

2. Background

Participant owned and contracted Qualifying Resources capable of providing capacity may be used to meet a Participant's FS Capacity Requirement. In order to receive a QCC for these Qualifying Resources, a Participant must provide the necessary information and data to the Program Operator. The Program Operator will develop and

maintain a registration and certification process for all Qualifying Resources identified for the FS Program as outlined in BPM 105. BPM 105 does not cover timelines associated with Participants and the Program Operator completing the registration and QCC assessment process. Timelines for registration can be found in *BPM 101 Advance Assessment ~~Timeline~~*.

3. Resource Registration

3.1 Resource Eligibility

A Participant will register all owned resources in its portfolio and all resources acquired in resource specific contracts in order for those resources to receive QCC values, subject to the exceptions described in BPM 105.

Resource registrations, including the appropriate modeling data required by the Program Operator, shall be submitted in accordance with deadlines stated in *BPM 101 Advance Assessment*, relating to the timeline for the Advance Assessment.

Participants shall employ the Advance Assessment Data Request ~~workbook~~, and the guidance and instructions in the Data Request Instruction Manual for providing resource registration information. The then-effective versions of the Advance Assessment Data Request ~~workbook~~ and the Data Request Instruction Manual ~~shall be~~are ~~made~~ available ~~at an appropriate location~~ on the WPP website. The QCC calculations for all Qualified Resources will be updated during each Advance Assessment to be used for the applicable Binding Season.

Resources owned and operated by entities that are not Participants and contracted to Participants with resource specific contracts (i.e., not System Sales or block contracts) must be registered with the Program Operator and provide the necessary data in order for Participants to claim the full QCC from these resources toward their FS Capacity Requirements.

Qualified Resources must be 1 MW minimum to qualify for registration (see Section 3.3). The registration process for all Qualifying Resources, other than Storage Hydro Qualifying Resources, will require, but will not be limited to, provision of the information set forth in Table 1 and Table 2 to the Program Operator, by means of the Advance Assessment Data Request ~~workbook~~. Registration of Storage Hydro Qualifying Resources will require, but will not be limited to, the provisions of items set forth in Table 3 to the Program Operator, by means of the Advance Assessment Data Request ~~workbook~~.

3.2 Late Registration of Resources

Resources that are unable to register by the deadline of the Advance Assessment Data Request may still be able to register through the following processes. Such resources may include those owned by Participants or those contracted to Participants with resource specific contracts.

A Participant may register a resource after the Advance Assessment deadline and prior to the FS Submittal Deadline (the process and timeline for submitting the FS Submittal can be found in *BPM 108 Forward Showing Submittal*) provided the Participant provides the necessary information in Table 1 and Table 2 (or Table 3 for Storage Hydro resources). The QCC that will be allowed for late registered resources will be either the class average of similar resources or will be a discounted QCC based on the circumstances of the data provided as further described in Generator Testing (Section 3.4) and Qualifying Capacity Contribution of Resources (Section 4).

Given that the program has very little information about late registered Qualified Resources, such resources may constitute no more than 10% of the total FS Capacity Requirement for an individual Participant, unless that Participant can demonstrate an increase in the load participating in the WRAP after the Advance Assessment data collection deadline. During the Transition Period, late registered resources may constitute as much as 20% of an individual Participant's total FS Capacity Requirement, unless that Participant can demonstrate an increase in the load participating in the WRAP after the Advance Assessment data collection deadline. In the case of increased load, the Participant may provide late registered resources to meet the FS Capacity Requirement for the additional load, as well as for the load anticipated to participate at the time of the Advance Assessment data collection deadline.

Table 1. Information Required for Resource Registration

	Description / Instructions
Facility Name	Plant name of the resources. If possible, utilize the Energy Information Administration (EIA)-860[2] plant name given for U.S. resources.
Unit ID	The unique generator identification commonly used by plant management. If possible, utilize the EIA-860 Generator ID given for U.S. resources.
Prime Mover	Utilize the predetermined dropdown list of EIA-860 Prime Mover identifiers. For combined

[2] https://www.eia.gov/electricity/data/eia860/

Description / Instructions	
	cycle resources, a prime mover code must be entered for each generator.
Fuel Type	Utilize the predetermined dropdown list in the workbook of Fuel Types used as the primary energy source to power the generator.
Host Balancing Authority	Provide the Balancing Authority Area (BAA) in which the resource is located.
Ownership or Contracted Percentage for Participant	Enter the percentage of resource capability owned or contracted by the Participant. This should also include the percentage of any power purchase agreement (PPA) where the Participant has fully contracted for the capacity from a facility but would not include a PPA with another Participant. For example, if the Participant has a PPA with a wind developer, solar developer, or city that has local generation for an extended period of time (i.e., 15 Years or life of the facility) then the percentage of the offtake of that facility should be listed here.
Summer Max Capacity or Nameplate (MW)	Provide the generator's Net Generating Capability for the primary energy source. This can be i) the net expected capacity, as determined from a summer Capability Test performed in accordance with the procedures on generator testing, Section 3.4 ii) the EIA-860 nameplate capacity for Wind, Solar, Run-of-River (ROR), and Energy Storage Resources (ESR) located in the U.S. and iii) the nameplate capacity for Wind, Solar, ROR and ESR located outside of the U.S.
Winter Max Capacity or Nameplate (MW)	Provide the generator's Net Generating Capability for the primary energy source. This can be i) the net expected capacity, as determined from a winter Capability Test performed in accordance with the procedures on generator testing, Section 3.4 ii) the EIA-860 nameplate capacity for Wind, Solar, ROR, and ESR located in the U.S. and iii) the

Description / Instructions	
	nameplate capacity for Wind, Solar, ROR and ESR located outside of the U.S.
In-Service Date Month-Year	Provide the Month and Year of the original in-service date (or commercial operation date) that the resource became operational (if possible, the operating Year used in EIA-860 should be submitted for all resources within the U.S.). For details on the format of the submittal, refer to the Data Request Instruction Manual ~~as posted in an appropriate location~~ on the WPP website.
Retirement Date Month-Year	Provide the Month and Year for resources that have been either formally announced or marked for retirement.
State or Province	Enter the state acronym where the resource is physically located. For resources in Canada, enter the province.
County	For resources in the U.S., enter the county (or county equivalent) where the resource is located.
Inverter Loading Ratio (Only for Solar and Wind)	For solar and wind resources only, enter the loading ratio of the inverter compared to the nameplate of the resource. As an example, if the nameplate of a solar resource is 150 MW and the inverter is limited to 125 MW (oversizing of solar panels), then the ratio would be 1.2 (150 / 125). If the nameplate of the resource is the same as the inverter, or the loading ratio is not known, the provided loading ratio would be 1.0.
ESR Duration (Only for ESRs)	For ESRs, enter the maximum continuous number of hours for which the ESR can be utilized at its maximum capacity.
Facility Limitation MW (Only for Hybrid Facilities)	For Hybrid Facilities, provide the maximum capability which the combined amount of the component resources can output to the system. This is typically based on the inverter limit before generation is output to the system.

Description / Instructions	
Comments	Enter, if applicable, any additional comments about the submitted information.

Table 2. Additional Information Required for Resource Registration

Description / Instructions
Thermal Resources - North American Electric Reliability Corporation (NERC) Generating Availability Data System (GADS) or equivalent data is required for all Thermal Resources. For further details on the format of the submittal, refer to the Data Request Instruction Manual ~~as posted~~ on the WPP website.
Wind, ROR ~~Hydro~~, Solar Resources – hourly output profiles for the last 10 Years or as much as is available. For further details on the format of the submittal, refer to the Data Request Instruction Manual ~~as posted~~ on the WPP website.

The registration process for all Storage Hydro Qualifying Resources will require, but will not be limited to, the items in Table 3, as follows:

Table 3. Storage Hydro Qualifying Resource Registration

	Description / Instructions
Facility Name	Plant name of the Storage Hydro Qualifying Resource. If possible, utilize the EIA-860 plant name given for U.S. Storage Hydro Qualifying Resources.
Unit ID	The unique generator identification commonly used by plant management. If possible, utilize the EIA-860 Generator ID given for U.S. Storage Hydro Qualifying Resources.
Prime Mover	Utilize the predetermined dropdown list of EIA-860 prime mover identifiers.
Host Balancing Authority	Provide the BAA location of the Storage Hydro Qualifying Resources.
Ownership or Contracted Percentage for Participant	Enter the percentage owned or contracted by the Participant. This should also include the percentage of any PPA where the Participant has fully contracted for the capacity from a facility but would not include a PPA with another Participant.
Individual Monthly QCC (MW)	QCC values by Month (all Months of the Year) for all Storage Hydro Qualifying Resources. The QCC of the Storage Hydro Qualifying Resources is determined by Section 4.
In-Service Date Month-Year	Provide the Month and Year of the original in-service or commercial operation date that the Storage Hydro Qualifying Resource became operational (if possible, the operating Year used in EIA-860 should be submitted for all Storage Hydro Qualifying Resources within the U.S.). For planned Storage Hydro resources, enter the Month and Year the Storage Hydro Qualifying Resource is projected to become operational.

Description / Instructions	
Retirement Date **Month-Year**	Provide the Month and Year for resources that have been either formally announced or marked for retirement.
State or Province	Enter the state abbreviation where the Storage Hydro Qualifying Resource is physically located. For Storage Hydro Qualifying Resources in Canada, enter the province.
County	For Storage Hydro Qualifying Resources in the U.S., enter the county (or county equivalent) where the Storage Hydro Qualifying Resource is located.
Comments	Enter, if applicable, any additional comments about the submitted information.

3.3 Qualifying Resource Aggregation (Resources <1 MW)

Qualifying Resources that are less than 1 MW in size may be aggregated to obtain the minimum 1 MW registration requirement.

Qualifying Resources that are aggregated will need to have a common injection point of capacity to the transmission system. Aggregations of generators at different distribution substations may be allowed provided the generators are in the same BAA, same zone (as applicable by resource type), and are the same resource type.

For Qualifying Resources that are requested to be aggregated, the following information should be provided to the Program Operator.

- For the aggregated facility:
  - Quantity of generators being aggregated.
  - Combined nameplate of generators being aggregated.
  - One-line diagram of the transmission/distribution system at which the generators are located.
- For each generator being aggregated:
  - Nameplate.
  - Location of power injection to the transmission system (substation).
  - Supporting information for QCC evaluation.

This information will be provided to the Program Operator ~~in a form that will be provided with~~during the Advance Assessment Data Request ~~workbook on the WPP website~~submission.

3.4 Generator Testing

3.4.1 Background

Qualifying Resources must have Capability Tests and Operational Tests performed and provided by the Participant, as applicable and in accordance with the guidelines contained in BPM 105. Capability Tests will be required for resources as detailed below. All Qualifying Resources must perform annual Operational Tests.

3.4.2 Capability Testing

Capability Tests will be required for Thermal Resources, Long Duration Storage resources, and Demand Response resources (as defined in BPM 105) with exceptions as noted in this section.

For units that are required to perform Capability Tests, the Participant may choose whether to use Capability Tests on a unit-by-unit basis or on a plant-level basis; regardless of the approach, all units requiring a QCC must be tested (see bullet 3 below). Capability Test duration shall be a minimum of one hour. Once a qualifying Capability Test is submitted to the Program Operator by the FS Submittal Deadline, the five-Year submittal window will be reset. The Capability Test may be performed at the convenience of the Participant and can be completed more often than every five Years. The most recent testing data will be used to determine a generator's QCC if a Capabilty Test is performed between the Advance Assessment and the FS Submittal.

For Storage Hydro, ROR Hydro, Wind, Solar, and ESR, the annual Operational Test will suffice as the Capability Test.

3.4.2.1 Capability Test Requirements for Thermal Resources

Capability Tests conducted for Thermal Resources are used as the base accredited value to which Unforced Capacity (UCAP) calculations are applied (see Section 4.2) to determine final QCC values. A Thermal Resource that is not subject to generator testing requirements (i.e., are not subject to NERC MOD-025 requirements) may have its QCC values determined in accordance with Section 4.2, Option 1, in lieu of performing the Capability Test.

Capability Tests for Thermal Resources will be performed during the Summer Season and must meet the testing requirements specified in BPM 105. A resource may use its Summer Season Capability Test value for both the Summer Season and the Winter Season. If a unit has a greater Net Generating Capability for the Winter Season than for the Summer Season, a separate Capability Test will need to be performed during the Winter Season to claim the higher Net Generating Capability value.

The following requirements must be met for a Thermal Resource Capability Test, documentation of which will be provided to the Program Operator at the time of the FS Submittal Deadline:

1) Summer Capability Tests are to be conducted during a time when the ambient dry-bulb temperature is no more than 10 degrees Fahrenheit below the station ASHRAE Rated Ambient Temperature. At the time of testing, the most recent version of the ASHRAE Fundamentals Handbook shall be utilized. If the dry-bulb temperature exceeds 10 degrees below the ASHRAE Rated Ambient Temperature, a penalty of 5% plus an additional 0.5% per degree for each additional degree below 10 degrees, up to 20 degrees, will be applied to the Capability Test result. A summer Capability Test shall not be performed ~~in excess of~~below 20 degrees ~~below~~ of the ASHRAE Rated Ambient Temperature. There is no ambient temperature requirement for Winter Capability Tests.
2) The unit shall be brought to the desired test load and allowed to stabilize. Once the test period has begun, only minor changes in unit controls shall be made as required to maintain the unit in normal, steady-state operation.
3) The unit capability shall be determined separately for each generating unit in a power plant where the input to the prime mover of the unit is independent of the others. Units that are aggregated into a single Resource Registration and prefer testing aligned with their registered resource and/or are dependent upon common systems (i.e., fuel, steam supply, auxiliary equipment, transmission, etc.) which restrict total output shall be tested simultaneously. Each unit shall be assigned an individual capability by apportioning the combined capability among the units.
4) The fuel used during testing shall be the type expected to be used during peak load conditions.
5) The capability of a unit or plant obtained through non-typical operation (i.e., bypassing feedwater heaters, varying steam conditions, alternate control mode, etc.) is acceptable.

3.4.2.2 Capability Testing of Long Duration Storage Resources

Capability Tests for Long Duration Storage resources are used as the base accredited value to which UCAP calculations are applied (See Section 4.2) to determine final QCC values. A Long Duration Storage resource that is not subject to generator testing requirements (i.e., are not subject to NERC MOD-025 requirements) may have its QCC values determined in accordance with Section 4.2, Option 1, in lieu of performing the Capability Test. There are no temperature or timing requirements on the Long Duration Storage Capability Test, other than the five-Year frequency.

1) The unit shall be brought to the desired test load and allowed to stabilize. Once the test period has begun, only minor changes in unit controls shall be made as required to maintain the unit in normal, steady-state operation.
2) The unit capability shall be determined separately for each generating unit in a plant where the input to the prime mover of the unit is independent of the others. Units that are aggregated into a single Resource Registration and prefer testing aligned with their registered resource and/or are dependent upon common systems (i.e., fuel, steam supply, auxiliary equipment, transmission, etc.) which restrict total output shall be tested simultaneously. Each unit shall be assigned an individual capability by apportioning the combined capability among the units.
3) The fuel used during testing shall be the type expected to be used during peak load conditions.
4) The capability of a unit or plant obtained through non-typical operation (i.e., bypassing feedwater heaters, varying steam conditions, alternate control mode, etc.) is acceptable.

3.4.2.3 Capability Testing of Demand Response Programs

A Capability Test for a Demand Response (DR) program registered as a Qualifying Resource will be used to confirm the claimed capability of the DR program, as well as the claimed duration of the load reduction (up to five hours). Capacity testing of the DR program will consist of a sustained reduction in load attributable to the deployment of the controllable and dispatchable program by the Participant for up to five hours. If a DR program fails to achieve the claimed load reduction capability and duration during the Capability Test, the DR program's QCC will be determined using the tested values instead. If the DR resource has a higher capacity value in one of the two Binding Seasons, the Capability Test must be conducted during the Binding Season with the higher capacity value; the DR resource does not need to be re-tested during the season with a lower capacity value. There are no temperature requirements for the DR Capacity Test.

As noted in Section 4.6, new DR programs, or the newly expanded portion of a DR program, will be assigned a QCC of 50% of the expected capability. If the Participant desires a higher QCC than 50% of the expected capability, Participant may conduct a Capability Test outside of the expected peak season of the DR program. Testing outside of the peak season will only be considered a Capability Test during the first Year of operation or during the expansion of an existing DR program. An Operational Test shall then be performed during the upcoming Binding Season and reported to the Program Operator (see Section 3.4.3.6).

3.4.2.4 Forced Outages Affecting Capability Testing

If a unit is due for a Capability Test, but unable to perform the Capability Test due to a forced outage, a maintenance outage, or a forced de-rate, the most current Capability Test results may be used, provided it is used only for the immediately succeeding Summer Season and Winter Season. The unit will be required to perform an Operational Test per the Operational Testing procedures (Section 3.4.3) before the next Summer Season. For example, if a unit enters a forced outage while performing a Capability Test and the repair for the unit cannot be completed until after the Summer Season, then when the unit is repaired, an Operational Test must be completed. In that case, the previous Capability Test will be used to satisfy the generator testing requirements for the upcoming Summer Season FS ~~Capacity Requirement workbook~~ submittal. A Capability Test must be performed in the next Summer Season for the next FS ~~Capacity Requirement workbook~~ submittal. If the unit fails to complete the make-up Capability Test, the unit cannot be claimed on the FS ~~Capacity Requirement~~ Submittal.

3.4.3 Operational Testing

3.4.3.1 Thermal Resources and Long Duration Storage

An Operational Test serves as an annual demonstration of the functional capability of a Qualifying Resource to generate at a high-level of its Net Generating Capability in the upcoming Binding Season. This test must be completed in the ~~12~~16-Month period prior to the ~~FS Submittal due date~~end of the Cure Period and can be conducted within or outside of a Binding Season (at Participant's discretion). Test data shall be compiled and submitted via the FS Submittal process, as outlined in *BPM 108 Forward Showing Submittal*. The Operational Test must be conducted at a minimum of 90% of the Summer Net Generating Capability. The Operational Test shall be conducted for a minimum of one hour, and for Thermal Resources there are no Rated Ambient Temperature requirements for Operational Tests. Any hour with the unit operating at or above 90% of the Net Generating Capability may be deemed a successful Operational Test. In case of failure to meet 90% of the Net Generating Capability, the resource can only claim what it can achieve on the Operational Test (to which the UCAP calculations are applied – see Section 4.2) for purposes of determining its QCC for the upcoming FS Submittal.

3.4.3.2 Storage Hydro Resources

An Operational Test serves as a verification that the resource can meet its QCC values on a plant-level basis as determined by the Storage Hydro QCC methodology. This test must be completed in the 12-Month period directly prior to the FS Submittal due date and can be conducted within or outside a Binding Season (at Participant's discretion). Test data shall be compiled and submitted via the FS Submittal process, as outlined in *BPM 108 Forward Showing Submittal*. The Operational Test must achieve a minimum of

90% of the plant's highest monthly QCC value from the FS Submittal being submitted. The Operational Test shall be conducted for a minimum of one hour and there are no Rated Ambient Temperature requirements for Operational Tests. Any hour with the plant operating at or above 90% of the highest monthly QCC submitted for the current and previous Binding Season may be deemed a successful Operational Test. In case of failure to meet 90% of the highest monthly QCC, the resource can claim no more than what it achieved on the Operational Test for purposes of determining its QCC for the upcoming FS Submittal.

Given that the Operational Test can be performed on any hour in a 12-Month period, the Operational Test should be scheduled (or re-scheduled) for a time when outages/de-rates are not occurring. If one or more units were on outage or de-rated at the time of the Operational Test, in order to claim the full QCC value provided by the Storage Hydro QCC methodology, the Participant shall:

1) Demonstrate that the unit(s) out/de-rated at the time of the Operational Test were offline/de-rated for more than 90 consecutive days of the 12 Months preceding the FS Submittal due date.
2) Demonstrate that the unit was out/de-rated for the entirety of one of the Months with the three highest monthly QCC values for the plant.
3) Provide operational data demonstrating the unit(s) performance on any hour within the 12 Months preceding the FS Submittal due date, or within the Cure Period.
4) Add the sustained hour-long operational value from the hour identified in (3) to the Operational Test values.

If 90% of the highest monthly QCC value cannot be achieved after this addition, the Participant can claim no more than the Operational Test (after the addition in (4) above) for any Month's QCC value.

3.4.3.3 ESRs

Operational Tests for ESRs should at least be conducted for the claimed duration of the device – i.e., two-hour, four-hour, etc. An ESR must be able to achieve its full QCC as determined in the QCC process for ESRs.

3.4.3.4 ROR Hydro

Operational Tests shall be conducted at a minimum of 90% of the QCC for either Binding Season. Any hour with the resource operating at or above 90% of the QCC may be deemed a successful Operational Test. In case of failure to meet 90% of the QCC, the resource can only claim what it can achieve on the Operational Test for purposes of determining its QCC for the upcoming FS Submittal.

3.4.3.5 Wind and Solar Qualifying Resources

Operational Tests shall be conducted at a minimum of 100% of the seasonal QCC for either Binding Season. Any hour with the resource operating at or above 100% of the QCC may be deemed a successful Operational Test. In case of failure to meet 100% of the QCC, the resource can only claim what it can achieve on the Operational Test for purposes of determining its QCC for the upcoming FS Submittal.

3.4.3.6 Demand Response Resources

An Operational Test will be conducted yearly during the Participant's peak Binding Season and at a minimum of 50% of the DR program's claimed load reduction capability (to avoid unnecessary disruption to the Participant's customers). The duration of an Operational Test shall be for a minimum of one hour.

3.4.4 New or Upgraded Resource Operational Testing

For newly installed resources and resources undergoing a physical or operational modification which could impact the Net Generating Capability, design output may be used for the first FS Submittal of the appropriate Binding Season to allow sufficient time for Operational and Capability Tests to be conducted. For resources required to do so, a Capability/Operational Test shall be performed in the Binding Season addressed by such first FS Submittal, in order to establish the new Net Generating Capability for all succeeding Binding Seasons.

3.4.5 Operational Testing for Late Registered Resources

Late Registered resources will be required to submit applicable generator Operational Test reports as required by the resource Fuel Type. If a Participant demonstrates that it has contracted for a resource not previously registered with the WRAP after the Advance Assessment Data Request deadline for the Binding Season in which capacity is being claimed to meet FS Capacity Requirements, the resource will be treated as if it had tested at 95% of its Installed Capacity. A resource previously registered with the WRAP that does not have any form of generator test results provided will be assumed to have tested at 70% of its Installed Capacity. Resources not owned or operated by a Participant that have test reports provided in a form other than the WRAP format, will be evaluated by the Program Operator and assigned an appropriate testing value based on comparability to testing requirements established in BPM 105; testing reports determined not comparable will be assumed to have tested at 70% of Installed Capacity. If the resource is newly installed or upgraded, the applicable section on new and upgraded resources will be followed.

3.4.6 Provision of Test Reports in the FS Submittal

Test reports will be provided to the Program Operator in the FS Submittal (see *BPM 108 Forward Showing Submittal* for more details). The QCC values for resources will be based on the Capability Tests and/or Operational Tests provided in the FS Submittal.

4. Qualifying Capacity Contribution of Resources

4.1 Background

A resource will not be assigned a Resource QCC or counted toward Portfolio QCC unless it is a Qualifying Resource. Qualifying Resources are those that, before they are included in an FS Submittal, are first registered in the WRAP. A Participant seeking registration of a resource must submit a request for registration providing the resource information described in Section 3.

This section describes the methodology used to assign Resource QCCs to Qualifying Resources when resources are registered through the Advance Assessment based on resource type, as well as when Qualifying Resources of each resource type are registered after the Advance Assessment ~~d~~Data ~~collection~~ Request deadline (as a late registered resource).

4.2 Thermal or Long Duration Storage Resources

For dispatchable resources that use conventional thermal fuels such as coal, gas, Equivalent Forced Outage Factors (EFOF) biofuel, and nuclear, or Long Duration Storage, the FS Program will use an EFOF methodology to determine the QCC. Accreditation of non-dispatchable Thermal Resources is covered in Section 4.8.2.

The seasonal QCC will be determined for each resource by applying the $EFOF_{CCH}$ to the Net Generating Capability (or Installed Capacity) as determined in Section 3. The Capacity Critical Hours (CCH)[3] will be used to determine the hours to be used in calculating the EFOF for each resource. The $EFOF_{CCH}$ calculation, as set forth in the formula in Section 4.2.1 below, will be performed for each Year of the most recent six-Year historical look-back period. The equivalent outage factor is calculated by removing the worst performing Year (for each Summer and Winter Season) and then taking an average of the remaining five Years of data. The final calculated $EFOF_{CCH}$ will be applied to the Net Generating Capability to calculate the QCC amount for the thermal generator for the entire Binding Season.

Planned outages and any outage properly reported as "outside management control" are not included in $EFOF_{CCH}$ calculations[4].

[3] CCH are calculated in accordance with *BPM 104 Capacity Critical Hours.*

[4] https://www.nerc.com/pa/RAPA/gads/Pages/Data%20Reporting%20Instructions.aspx

For resources new to the FS Program that do not have sufficient data over the historical period used for determining a QCC, class average data for resources of similar size will be used.

4.2.1 $EFOF_{CCH}$ Equation

$$EFOF(CCH) = 1 - \frac{\sum FOH_{CCH} + EFDH_{CCH}}{total_{CCH}} * 100\%$$

Where:

FOH_{CCH} is Forced Outage Hours occurring on CCH,

$EFDH_{CCH}$ is Equivalent Forced Derating Hours occurring on CCH, and

$Total_{CCH}$ is total number of CCH for the timeframe of interest.

Definitions of FOH_{CCH} and $EFDH_{CCH}$ can be found in Table 4.

Table 4. Definitions of FOH and EFDH

Definitions	
FOH_{CCH}	Sum of all CCH experienced during Forced Outages (U1, U2, and U3) + Startup Failures[5].
$EFDH_{CCH}$	Each forced derating (D1, D2, and D3)[6] transformed into equivalent full outage hour(s). This is calculated by multiplying the actual duration of the derating (hours) by the size of the reduction (MW) and dividing by the net maximum capacity. These equivalent hour(s) are then summed by CCH. $\frac{Derating\ Hours * Size\ of\ Reduction}{Net\ Maximum\ Capacity}$

Additional Thermal QCC calculation considerations:

[5] See NERC GADS reporting instructions at https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/GADS_DRI_2023.pdf

[6] Ibid.

- Calculation is performed for each resource seasonally and for each historical Year. QCC will be assigned to each resource for the entire Binding Season.
- Six Years of data will be used for the calculation. The worst performing Winter Season and the worst performing Summer Season will be removed from the calculations, allowing for a five-Year average.
- Only forced outages or de-rates occurring during CCHs will be used to calculate QCC. Outages during hours that are not deemed to be capacity critical will not negatively impact QCC.
- All Years (of the five Years) will have equal weighting.
- Outside of Management Control outages as reported under NERC GADS Appendix K[7] (or equivalent) will be excluded from the calculation.
- For Participants relying on resource specific transactions external to the FS Program, those Qualified Resources will follow the same QCC calculation for Thermal Resources and the Participant will be responsible to make sure the information is provided to the Program Operator.
- The Program Operator will break out each event by hour. If the NERC GADS (or equivalent) data is reported in minutes, then the hour that contains the outage will be equalized to account for the minutes. For example: if an outage starts on June 1, 2020 at 4:25 PPT, then the hour duration for that hour will be less than one since the outage does not start at the top of the hour. The total hours for June 1, 2020 on hour beginning 4:00 PPT would be 0.583 *([60 Minutes – 25 minutes] / 60 minutes in an hour).*
- Diversity of time zones will be considered. Participants are required to list the time zone that is appropriate for their respective data.
- When comparing the event hours to the CCH hour identification should be consistent.

4.2.2 Late Registered Thermal Resources

If a Participant seeks to claim capacity from a Thermal Resource not registered at the time of the Advance Assessment Data Request, the Participant may use the late

[7] Appendix K of NERC GADS: https://www.nerc.com/globalassets/programs/rapa/gads/conventional/appendix_k_outside_management_control_2024_dri.pdf

registered resource options (described generally in Section 3.2), choosing one of the following approaches:

1) Demonstrate that the resource was acquired following the Advance Assessment Data Request due date for the Binding Season in question, in which case the resource will be permitted to use the class average QCC for Thermal Resources in the program; or
2) Claim a decremented QCC of 70% of the class average for Thermal Resources in the program.

4.2.3 Thermal Resources That Are Not Required to Report GADS Data

Certain Thermal Resources are not required to report GADS data. GADS data applies to generator owners who are NERC registered with Qualified Resources that are 1) connected to the Bulk Electric System and 2) are synchronous machines of 20MVA or larger, or distributed generation facilities of 75MVA or larger. Smaller Qualified Resources interconnected to the power system as well as behind the meter resources may not be required to report GADS data. For these Qualified Resources, the Participant will have two options to pursue in order to have QCC determined.

Option 1 – Historical Output. The first option will determine QCC based on the monthly average performance of such resource during CCH. The Participant will provide 10 Years of historical hourly dispatch data. This data will be provided with the data submittal (see *BPM 101 Advance Assessment*). A workbook posted on the WPP website that contains the latest set of CCH will allow the Participant to calculate their QCC for the FS ~~workbook~~Submittal. The workbook will allow the Participant to calculate the QCC values taking the average of the facility output during the CCH. If less than 10 Years of historical data is available for use in determining the QCC, the Program Operator will utilize the methodology described in Section 4.8.2.

Option 2 – Historical Outage Evaluation – The second option will determine QCC based on the monthly outage records provided by the Participant for the resource in question. A workbook detailing what outage information is required for a QCC calculation can be found ~~posted~~ on the WPP website. The Participant will provide five Years of outage information as provided in the workbook. The Program Operator will determine the QCC of the resource in question using a methodology similar to the $EFOF_{CCH}$ methodology applied to all Thermal Resources. ~~An example of the information required in the workbook is shown in Table 5.~~

~~*Table 5. Sample from Workbook for EFOF Calculation*~~

~~Date Time Start~~	~~Binding Season (listed if hour is a CCH)~~	~~CCH? (if the hour is CCH, value is 'TRUE')~~	~~Was resource on forced outage? (1-yes) (0-no)~~	~~Was the outage OMC[8]? (1-yes) (0-no)~~	~~Was the resource forced de-rated? % de-rate from generating capability (0-100%) 100% if on full outage~~	~~Hourly Forced Outage de-rate (0-100%)~~
~~11/1/2014 0:00~~	~~Winter2015~~	~~FALSE~~	~~1~~	~~1~~	~~100%~~	~~100%~~
~~11/1/2014 1:00~~	~~Winter2015~~	~~FALSE~~	~~1~~	~~1~~	~~100%~~	~~100%~~
~~11/1/2014 2:00~~	~~Winter2015~~	~~FALSE~~	~~1~~	~~1~~	~~100%~~	~~100%~~
~~11/1/2014 3:00~~	~~Winter2015~~	~~FALSE~~	~~1~~	~~1~~	~~100%~~	~~100%~~
~~11/1/2014 12:00~~	~~Winter2015~~	~~FALSE~~	~~1~~	~~1~~	~~100%~~	~~100%~~

~~[8] Outside of Management Control (OMC)~~

~~Once all outage data information has been entered, the workbook calculates the EFOF on the results summary tab.~~

For all Qualified Resources not providing GADS reporting data, the Participant will be required to provide an attestation (provided in *BPM 108 Forward Showing Submittal*) attesting that the resource is not subject to GADS reporting and the workbooks submitted by the Participant are an accurate depiction of either the historical performance or historical outage data of the resource.

4.3 Variable Energy Resources

The QCC for Variable Energy Resources (VERs), including but not limited to wind and solar resources, will be determined for each Month of the Binding Season through the use of an Effective Load Carrying Capability (ELCC) analysis and a subsequent allocation process. Each Binding Season will have its own ELCC analysis performed during the Advance Assessment and each resource will be assigned a new QCC in advance of each Binding Season. Each Binding Season's ELCC analysis will have a scope document that will detail the study.

4.3.1 Source Data for Resources Under Study

In accordance with Section 3 and the Advance Assessment data submittal described in *BPM 101 Advance Assessement*, the Participant will submit historical output data for wind and solar resources that are requested to have QCC determined. A Participant must submit three and may submit up to 10 Years of historical output data for wind and solar resources.

For newer resources that do not have 10 Years of operational data and historical output, the Participant may provide engineering data from the wind or solar plant operator. The Program Operator will evaluate the data provided and determine its usefulness in the ELCC process. The engineering data will need to provide synthesized outputs for the facility for at least the most recent three Years of historical conditions. Otherwise, the Program Operator will use either synthesized data or average output data of other VER resources in the appropriate VER Zone.

4.3.2 Late Registered VERs

If a Participant seeks to claim capacity from a VER not registered at the time of the Advance Assessment Data Request, the Participant may use options for late registering a resource, choosing one of the following approaches:

1) Demonstrate that the resource was acquired following the Advance Assessment Data Request due date for the Binding Season in question and claim the average ELCC of the VER Zone in which the resource is located, or

2) Claim a decremented QCC of 70% the average ELCC in the VER Zone in which the resource is located.

4.3.3 ELCC Study Process

The ELCC will be determined for the VERs in the WRAP Region. The ELCC study will consist of analyses utilizing Loss of Load Expectation (LOLE) metrics to determine the capacity provided by the VERs being analyzed. The LOLE benchmark metric to be used in the ELCC accreditation study will be a one event in 10-Year threshold.The ELCC of VERs will be calculated first on a seasonal basis then later prorated to a monthly QCC value. For the ELCC study, loss of load events will be tabulated during the Binding Season months for determination of the 1-in-10 LOLE. Loss of load events that occur outside of the Binding Season months will not go into the calculation of the capacity value of VERs. Pure Capacity will be applied to the simulation process to derive the 0.1 Day per Year reliability threshold. If the resulting LOLE is greater than the 0.1 Day per Year threshold, Pure Capacity will be added until the 0.1 threshold is achieved. If LOLE is less than the 0.1 Day per Year threshold, negative Pure Capacity will be added until the 0.1 threshold is achieved. The VER of interest will be excluded from the benchmark system. All other VER types will be included. For example, if the wind resource type is being analyzed, only wind will be excluded from the benchmark system.

The capacity calculated is designated in Figure 1 as Pure Capacity 1.

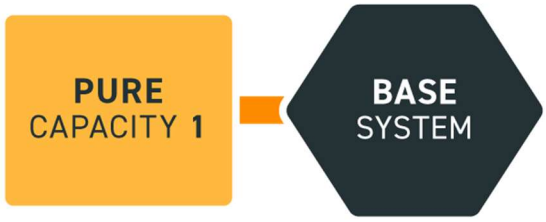

Figure 1. Diagram of system without renewable resources.

Next, a LOLE value for all wind generating resources will be determined, repeating the steps described previously. The Pure Capacity value calculated is designated in Figure 2 as Pure Capacity 2.

Figure 2. Diagram of system with renewable resources.

The difference between the results of these two steps is considered the ELCC QCC value of the resources being studied.

$$ELCC\ of\ VER\ (under\ study) = Pure\ Capacity\ 1 - Pure\ Capacity\ 2$$

These processes are repeated to determine QCC for all weather Years that are studied. This process is repeated for summer and winter separately.

Zonal shapes have been developed for the LOLE study based on facility locations in each VER Zone and correlated wind and solar activity with temperatures in those VER Zones dating back to 1980. The ELCC study will be performed using the synthetic shapes dating back to 1980, which are also used in the LOLE studies. The data provided by the Participants will be used in the establishment of the synthetic shapes and used in the allocation process for establishing the QCC of each VER resource as later outlined in ~~BPM 105~~Section 4.3.5.

The Program Operator will conduct the ELCC study by performing probabilistic simulations in a manner that resources in the WRAP Region will be randomly forced out of service during each hour of the study. Each simulation accounts for a different variation of forced outages and load uncertainty for all hours of the Year, similar to the LOLE study utilized to establish the FS Planning Reserve Margin.

4.3.4 Determination of ELCC Within VER Zones

The ELCC study will determine the amount of capacity provided by all VERs (of the specified type, e.g., wind) analyzed in the WRAP Region. The FS Program will employ the VER Zones for each VER type set forth in ~~BPM 105~~Section 4.3.6, as they may be revised from time to time. Each VER of a given type will be assigned to one of the VER Zones for that type. ELCC studies will be performed for each VER Zone (and VER type), calculating a total capacity value for the resource of interest in that zone. The capacity calculated for each VER Zone will be allocated to VERs of that type in that zone on a pro-rata basis.

4.3.5 Determination of System Wide ELCC and Allocation to Individual VER Zones

To avoid over-accreditation of VERs the Program Operator will conduct an ELCC study of the entire WRAP Region and calculate a total capacity value for all VERs in the WRAP Region. Additionally, all ESRs in a Subregion will be studied together. After all VER Zone capacity totals (for each VER type) and the capacity totals of ESRs in each Subregion have been determined, the sum of the VER Zone and ESR Subregion totals will be compared to the regional VER plus ESR total. If the sum of the VER Zones and ESR

Subregion is greater than the regional total, all VER Zone and ESR Subregion totals will be scaled down until the totals match the regional total. Table 5 provides an example of the calculations to determine total VER capacity.

Table 5. Example[9] ELCC Study of WRAP Region to Calculate Total Capacity.

A study of two wind zones and two solar zones reveals the following capacity values for each zone:				
Wind Zone 1	Wind Zone 2	Solar Zone 1	Solar Zone 2	**Total**
1,000 MW	800 MW	700 MW	1,000 MW	**3,500 MW**
A study of the region reveals the following capacity value for the region's wind and solar:				
Regional VERs				
The zones will be recalculated as follows:				
Wind Zone 1	Wind Zone 2	Solar Zone 1	Solar Zone 2	**Total**
1,000 * (3,200/3,500)	800 * (3,200/3,500)	700 * (3,200/3,500)	1,000 * (3,200/3,500)	
914 MW	732 MW	640 MW	914 MW	**3,200 MW**

ESRs, which are discussed in more detail below (Section 4.4), are also included in the system ELCC allocation and study.

4.3.6 VER Zones for Wind and Solar

WPP has established separate VER Zones for wind resources and solar resources, as shown, respectively, in Figure 3 and Figure 4.

[9] These examples are strictly illustrative, and do not set or limit any actual ELCC study results.

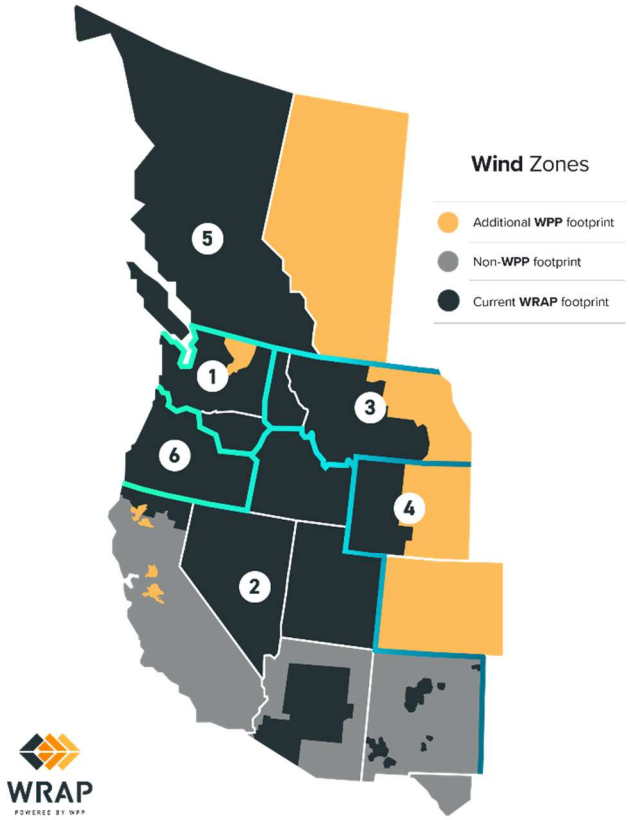

Figure 3. Wind VER Zones

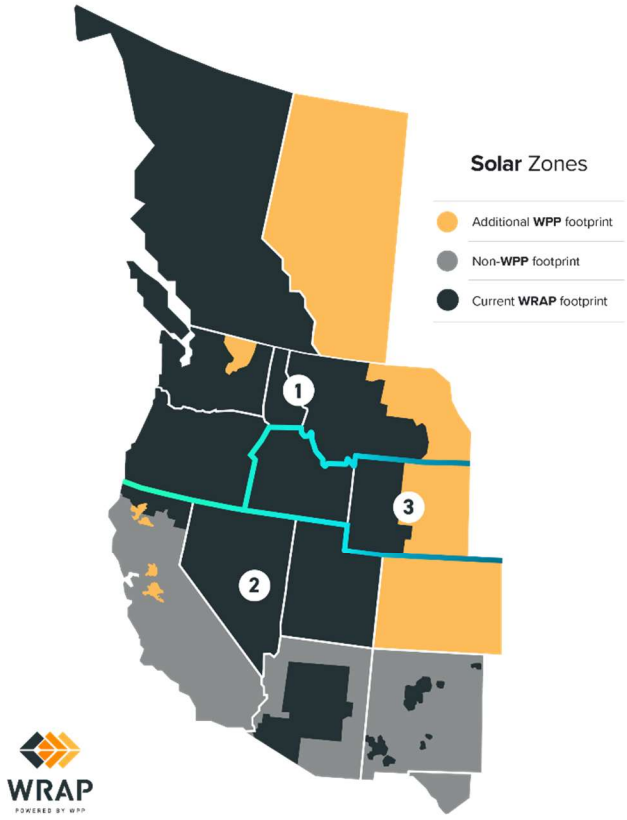

Figure 4. Solar VER Zones

4.3.7 Allocation of VER ELCC

4.3.7.1 Allocation of System Wide ELCC On a Resource Basis

Once the ELCC has been determined for each VER Zone for each Binding Season, two additional calculations must occur. The first step, which will occur before the system ELCC adjustment, takes the ELCC seasonal values for each VER Zone and converts them to a monthly basis for monthly QCC. Monthly QCC values for each VER Zone will be calculated by shaping the seasonal ELCC value in accordance with aggregate performance of all resources in the VER Zone during the CCH. Months that have higher resource performance during the CCH will be allocated a higher portion of the ELCC across the Binding Season. The QCC of each Month will average to the seasonal ELCC value. An example is given below in Table 6.

Table 6. Example[10] Monthly QCC Calculation for Wind VER Zone

		Summer Season			
		June	**July**	**Aug**	**Sept**
Average Production on CCH per Month	Calculated from historical performance data from wind in this VER Zone on a monthly basis	120MW	95MW	90MW	130MW
Average Production on CCH Across Season	Calculated from historical performance data from wind in this VER Zone on a seasonal basis	~~104~~108.75MW			
Monthly Multiplier	Divides each Month's production on CCH by the seasonal average	~~115~~110%	~~91~~87%	~~87~~83%	~~125~~120%
Seasonal ELCC	Value resulting from ELCC study	100MW			
Monthly QCC	Multiplies the monthly multiplier by the seasonal ELCC value	~~115~~110MW	~~91~~87MW	~~87~~83MW	~~125~~120MW

The monthly QCC values for each VER Zone are then used to determine the system ELCC value discussed in the section above.

The second step, which occurs after the system ELCC adjustment, will allocate the monthly QCC values to each resource based on the individual resource's performance during the CCH.

$$Resource\ ELCC = Monthly\ ELCC\ MW * \left(\frac{Resource\ average\ hourly\ net\ power\ output\ on\ top\ 5\%\ of\ net\ load\ hours\ (CCH)}{Zone\ total\ average\ hourly\ net\ power\ output\ on\ top\ 5\%\ of\ net\ load\ hours\ (CCH)}\right)$$

[10] These examples are strictly illustrative, and do not set or limit any actual ELCC study results.

4.3.7.2 QCC Allocations for VERs with Three Years or More of Operational Data

To allocate the ELCC MW to each resource, the Program Operator will utilize the historical hourly data for each resource provided by the Participant. For resources that have at least three Years of actual historical data, or at least three Years of engineered data for newer resources, the Program Operator will utilize the most recent three Years (up to 10 Years) of data when determining the resource's average hourly net power output.

4.3.7.3 QCC Allocations for New VERs or VERs with less than Three Years of Operational Data

The Program Operator will utilize the following method for newer VERs when determining the historical average hourly net power output:

1) No less than three Years will be utilized; and
2) A Participant (or resource owner) can supply synthesized data if at least three Years of actual data is not available, using:
    a) Manufacturer's engineering or performance data and actual weather (preferably from on-site, but not from outside of 50-mile radius); or
    b) Historical performance of similar resources within a 50-mile radius.
3) If three Years of data is not provided by the Participant, either through synthetic data or actual output, the resource will receive an ELCC value equal to the product of a calculated class average ELCC percentage times the nameplate capacity of the resource at issue. The Program Operator will use the synthesized wind output shape for the appropriate VER Zone to determine the class average ELCC percentage.

As actual data is accrued, it will replace synthesized data as it becomes available (e.g., one Year of actuals plus two Years of synthesized; two Years actuals plus one Year synthesized, then eventually three Years of actuals). Once a new or repowered facility has a full Year of operational data the synthesized data for Years two and three will be evaluated for reasonableness. If the synthesized data significantly understated or overstated the forecasted generation of the resource, the Year two and three synthesized data will be adjusted by the Program Operator accordingly.

4.3.7.4 Determination of ELCC for Future VERs

It is understood that as VERs are added to a system, the capacity value provided by all similar VERs as a function of the nameplate value of those resources will decrease. It therefore becomes important for Participants to have an understanding of how VER QCC values may change over time as the penetration of similar VERs increases.

After the QCC values of all existing and near-term planned VERs have been calculated and allocated, additional ELCC studies will be performed to account for future VERs of each type. These additional wind and solar resource amounts will be created by scaling up the number of wind turbines (nameplate capacity) or solar photovoltaic panels in each VER Zone. The Program Operator will provide an ELCC curve, useful for guidance purposes on a strictly non-binding basis, that can be used to estimate future capacity values for new resources dependent upon the penetration of resources in that VER Zone.

4.4 Energy Storage

The QCC for ESRs will be determined using the same general ELCC methodology used for wind and solar resources (see Section 4.3) with any specific differences being highlighted in this section and will be limited to ESRs that have the capability to store energy equal to or greater than the energy output by the ESR over four continuous hours (or longer) of operation. The ELCC study for each Binding Season will have a scope document that details the analysis. ESRs with eight-hour or longer durations are considered Long Duration Storage (Section 4.2).

ESRs will be modeled as energy limited devices that will charge and discharge in accordance with their equipment specifications. ESRs will be modeled to charge and discharge in a preserve reliability mode, which means they will only be discharged to mitigate potential loss of load when there is a lack of other resources available to serve load.

4.4.1 ESR with Four- to Eight-Hour Rating

Based on the four-hour minimum continuous time duration requirement, four-hour ESR or ESRs with longer duration ratings will receive QCC values based on the four-hour curve for the ESR penetration level of all ESRs on the system at the time of the ELCC assessment.

4.4.2 ESR with Rating Less than Four Hours

Based on the four-hour minimum continuous time duration requirement, ESRs with ratings less than four hours will receive QCC values based on the four-hour curve for the ESR penetration level of all ESRs on the system at the time of the ELCC assessment. For example, two-hour rated ESRs would receive no more than 50% QCC value of a four-hour ESR with the same maximum output.

4.4.3 Allocation of ELCC for ESRs

All ESRs in a WRAP defined Subregion will be studied together. All ESRs within a Subregion will receive the average ELCC value of ESRs with a four-hour rating in that Subregion, subject to the limitations outlined in Section 4.4.2. To ensure that over-

accreditation of ESRs does not occur, ESRs will be included in the ELCC study of all VERs of the WRAP Region and a total combined capacity value for all VERs and ESRs in the WRAP Region will be calculated. After all ESR Subregions and VER Zone capacity totals have been determined, the sum of the VER Zone and ESR Subregion totals will be compared to the WRAP Region VER total. If the sum of the VER Zones and ESR Subregion is greater than the regional total, all VER Zone and ESR Subregion totals will be scaled down until the totals match the regional total.

4.4.4 Late Registered ESRs

If a Participant seeks to claim capacity from an ESR not registered at the time of the Advance Assessment Data Request, the Participant may use the late registered resource options (described generally in Section 3.2), choosing one of the following approaches:

1) Demonstrate that the resource was acquired following the Advance Assessment Data Request due date for the Binding Season in question, in which case the resource will be permitted to use the class average QCC for the ESRs within the Subregion; or
2) Claim a decremented QCC of 70% of the class average for ESRs in the Subregion.

4.5 Hybrid Facilities

Hybrid Facilities are resources that have at least two different fuels or technologies at a common location where one of those resources is an ESR. The QCC for hybrid resources will be determined by applying the appropriate methodology to each component of the facility and summing them and capping the total at the interconnection limit. While hybrid resources are modeled as they would operate in the LOLE study, determining QCC for combined hybrid resource is not performed due to the inability to perform ELCC analysis for similar type resources.

4.6 Demand Response

DR can be utilized as a Qualifying Resource if it is greater than 1 MW in aggregate (see Section 3.3) and can be demonstrated to be controllable and dispatchable by the Participant or host utility. DR programs that register as Qualifying Resources will be assigned a seasonal QCC value (one value for each Binding Season) and will need to meet testing criteria and demonstrate load reduction (see Section 3.4.2.3) for a period of up to five continuous hours. A DR program may be able to demonstrate load reduction for a period beyond five continuous hours, but cannot receive QCC above 100% of what is demonstrated for the five hour duration. Programs that are not able to provide five hours of load reduction will have their load reduction prorated over the course of five hours for the determination of QCC value. Participants registering a DR

Qualifying Resource must either i) demonstrate that the DR program was not operated historically and has therefore not impacted the Historical Load Data provided by the Participant for determination of their P50 load value, or ii) provide historical information about the operations of the DR program such that the load reduction impacts of the DR program can be removed from the historical data prior to determination of the P50 load value.

The QCC value of the DR Qualified Resource is determined by multiplying the maximum load reduction (in MW) the resource is capable of sustaining by the number of hours the resource can demonstrate such sustained load reduction capability (up to five hours, maximum) divided by five.

A DR Qualifying Resource will be reflected in the FS Submittal as a capacity resource by submitting it as a 'Resource' in the FS Submittal. As with all resources, the QCC value of the DR Qualifying Resource will count toward a Participant meeting its FS Capacity Requirement.

If DR does not meet the criteria of a Qualifying Resource, its contribution to the load reduction may be captured in the historical data used to calculate the P50 load in the FS.

4.6.1 New, Expanded, or Late Registered DR Resources

DR programs intended to be used as Qualifying Resources in the first Year of operation or expansion of an existing program or DR programs not registered at the time of the Advance Assessment will be reported at 50% of the expected capability, unless validated by testing the program to 100% of the claimed capability prior to the Binding Season. See the section related to DR testing requirements (within Section 3.4.2) for more information.

4.7 Hydro Resources

4.7.1 Storage Hydro (Also see Appendix A – Qualified Capacity Contribution for Storage Hydro Resources)

QCCs for Storage Hydro resources are calculated by the Participant owners and the results are provided to the Program Operator for review, through the provision of the 'results tab' of the workbook. The Program Operator may ask the Participant for information from the Storage Hydro QCC methodology, subject to limitations described in the Tariff, as part of the verification and validation process. The Storage Hydro QCC methodology is based on the ability of Storage Hydro to maximize output during the CCHs each Day of the historical record, subject to operational limitations and non-power constraints of each plant. Limitations include available water in storage and all constraints that restrict the use of the Net Generating Capability. These constraints

include, but are not limited to, discharge limits, tailrace and forebay elevation limits, and rate of change limits.

The methodology considers each resource's actual generation output, residual generating capability, water in storage, reservoir levels (if applicable), upstream discharge from Cascaded Dual Plants and plant constraints over the most recent 10-Year historical period. The QCC of the Storage Hydro resource is determined using a calculation of how much historical actual generation could have been increased during CCHs by ~~increasing generation by~~ utilizing water in storage each Day to increase generation~~of the historical record~~, while respecting all operating constraints. The QCC is the monthly average of this hypothetical increased generation during the CCHs, for the same Month of the historical record. The resulting QCC is determined as the average contribution to the CCHs for each Winter Season and Summer Season over the previous 10 Years. The Storage Hydro QCC Workbook captures the aforementioned Storage Hydro QCC methodology and is available for use by WRAP Participants. If historical data is not available for 10 Years, a comparable facility may be utilized or some other reasonable approach that provides similar confidence in the computed QCC may be proposed by the Participant and adopted at the discretion of the WPP. The Participant will provide all required detailed data for the plant.

The detailed Storage Hydro QCC methodology can be found in Appendix A – Qualified Capacity Contribution for Storage Hydro Resources ~~of BPM 105~~.

4.7.1.1 Late Registered Storage Hydro Resources

If a Participant seeks to claim capacity from a Storage Hydro resource not registered at the time of the Advance Assessment Data Request, the Participant may use the late registered resource options, choosing one of the following approaches:

1) Demonstrate that the resource was acquired following the Advance Assessment Data Request due date for the Binding Season in question and utilize the established Storage Hydro QCC methodology described above, or
2) Claim a decremented QCC of 70% of the average Storage Hydro QCCs in the program.

4.7.2 Run-of-River (ROR) Hydro

ROR Hydro resources will have their QCC determined on the historical performance of the resources during the CCH over the most recent 10-Year period. The data provided by the Participant in the Advance Assessment data submittal (see *BPM 101 Advance Assessment*) will be used for the determination of QCC.

If less than 10 Years of historical data is available for use in determining the QCC of a ROR Hydro plant, the Program Operator will utilize the following method when determining the historical average hourly net power output:

1. No less than three Years will be utilized.
2. A Participant (or resource owner) can supply synthesized data if at least three Years of actual data is not available, using:
    a. Manufacturer's engineering or performance data;
    b. Actual water conditions (preferably from on-site, but not from a different river); or
    c. Historical performance of similar resources on the same river system.
3. If three Years of data is not provided by the Participant, either through synthetic data or actual output, the resource cannot receive a QCC value.

As actual data is accrued, it will replace synthesized data as it becomes available (e.g., one Year of actuals plus two Years of synthesized; two Years actuals plus one Year synthesized, then eventually three Years of actuals). Once a new or repowered facility has a full Year of operational data, the synthesized data for Years two and three will be evaluated for reasonableness. If the synthesized data significantly understated or overstated the forecasted generation of the resource, the Year two and three synthesized data will be adjusted by the Program Operator accordingly.

4.7.2.1 Late Registered ROR Hydro Resources

If a Participant seeks to claim capacity from a ROR Hydro resource not registered at the time of the Advance Assessment Data Request, the Participant may use the late registered resource options, choosing one of the following approaches:

1) Demonstrate that the resource was acquired following the Advance Assessment Data Request due date for the Binding Season in question and execute the methodology described above for ROR Hydro Resources (for validation by the Program Operator), or
2) Claim a decremented QCC of 70% of the average ROR Hydro QCCs in the program.

4.8 Other Resources

4.8.1 Customer Resources

Resources that are generally located on the customer-side of the meter can be included in the FS Program. To be eligible as a Qualifying Resource, the Customer Resource must 1) be controllable and dispatchable by the Participant or host transmission operator and 2) not have already been used to modify the Participant's Load Forecast (i.e., serving a portion or all of the load not included in Load Forecast). The resource

shall meet testing criteria applicable for resource type and will be awarded a QCC value based on the appropriate methodolgy for the resource type. Customer Resources (behind the meter resources) can be aggregated to the 1 MW requirement to be considered a capacity resource, granted that they are in the same BAA, controllable and dispatchable, and visible to the Ops Program.

4.8.2 Non-Dispatchable, Must Take Resources

For resources that are either i) not dispatchable; or ii) require the purchaser of energy from the resource to take energy as available from such resource, including but not limited to a qualifying facility as defined under the Public Utility Regulatory Policies Act (PURPA), the QCC will be determined based on the monthly average performance of such resource during CCH. The Participant will provide 10 Years of historical hourly dispatch data. This data may be provided within the Advance Assessment data submittal (see *BPM 101 Advance Assessement*) or a workbook ~~will be~~ found ~~at an appropriate location~~ on the WPP website ~~that contains the latest set of CCH~~. The workbook will allow the Participant to calculate the QCC values taking the average of the facility output during the CCH.

If less than 10 Years of historical data is available for use in determining the QCC of a non-dispatchable, must take resource, the Program Operator will utilize the methodology described in BPM 105 for the specific resource type. If the resource type is not covered in Sections 4.2 through 4.7 the Program Operator will utilize the following method when determining the historical average hourly net power output:

1. No less than three Years will be utilized.
2. A Participant (or resource owner) can supply synthesized data if at least three Years of actual data is not available, using:
    a. Manufacturer's engineering or performance data;
    b. Known or historical information about fuel availability;
    c. Known or historical information about unit performance; or
    d. Historical performance characteristics of similar resources.
3. If three Years of data is not provided by the Participant, either through synthetic data or actual output, the resource cannot receive a QCC value.

4.8.2.1 Late Registered Non-Dispatchable, Must Take Resources

If a Participant seeks to claim capacity from a non-dispatachable, must take resource not registered at the time of the Advance Assessment Data Request, the Participant will be required to execute the methodology described above for such resource (for validation by the Program Operator).

Appendix A – Qualified Capacity Contribution for Storage Hydro Resources

A.1 Time Period Approach for Summer and Winter Season Requirements

Storage Hydro resources will use a "time period" approach to determine the QCC. A time period approach consists of a historical look-back of the generation output during CCH to determine how much capacity should be expected to be available during high load periods in the future. While this approach is limited to a daily window for determining available capacity, it does establish a common and transparent method for determining the QCC for Storage Hydro Resources.

The following methodology would be used to determine the QCC value using the time period approach described above, and Table A-1 summarizes the resource information required to apply the methodology:

- For each Day found to contain one or more CCHs, the Storage Hydro resource will be evaluated to determine the maximum available capacity for each CCH, based on the conditions of the storage associated with the hydro resource on that Day.
- For each Storage Hydro resource, for each CCH, determine:
    - Maximum generation output during the CCH.
    - Usable water in storage at the end of the CCH.
    - QCC for each hour, which would be the historical generation output plus additional generation for capacity, up to the maximum generation capability (adjusted for reservoir elevation head as applicable), taking into account plant or unit-specific limitations (e.g., units on a common penstock, transformer limitations, etc.) and the resource's Equivalent Demand Forced Outage Rate (EFORd).
    - For calendar days with multiple CCHs, the QCC will be limited to the actual historical generation, plus the usable energy in storage over that Day.Non-power operational constraints that limit the use of energy in storage.

Table A-1. Resource information required to apply the time period methodology for QCC.

Information Needed	Notes
Reservoir Elevation Range	Min and Max – this may be seasonally adjusted.
Reservoir Storage Curve	Indicating volume of water in storage based on the reservoir elevation.
Capacity as a Function of Elevation	Plant maximum capacity at a given forebay elevation.
CCH Adjusted $EFOF_{CCH}$ or Historical Outage Evaluation Equivalent	Historical Forced Outage Factor.
Power as a Function of Discharge	For the "discharge method".
H/K as a Function of Elevation	For the "elevation method".
Hourly Historical Data	– Actual generation – Starting reservoir elevation – Ending reservoir elevation

From the information in Table A-1, the hourly values in Table A-2 can be estimated for each CCH:

Table A-2. Hourly values that can be estimated for each CCH.

Estimated Values	Notes
Actual water in storage	Using the elevation and storage (kcfs or cms) tables.
Additional capacity available beyond the actual generation	Subject to forebay elevation restrictions.
Cumulative additional generation	The running total of the additional generation claimed in each CCH for the Day, used to deplete the elevation of the reservoir to validate the feasibility of using additional capacity in each CCH on each calendar Day.
Hourly QCC	The sum of the actual generation plus the additional capacity available.

The Storage Hydro capacity contribution towards the FS Capacity Requirement is calculated by the resource owner as the simple average of the hourly QCC values in each CCH over the 10 Years studied. These QCC values are averaged over each Month in each Binding Season to determine final monthly QCC values.

A.2 Treatment of Planned Outages

In addition to accounting for forced outages, the UCAP values used in the FS workbooks may (at the Participant's option), be reduced for planned outages. Planned outages that are not included in the UCAP values will need to be planned in a manner similar to Thermal Resources, meaning those planned outages will be taken from the Participant's surplus capacity in excess to the Participant's FS Capacity Requirement.

Table A-3 and Table A-4 below illustrate the QCC calculation over a four-hour consecutive period using the UCAP methodology and the UCAP + planned outages methodology.

Table A-3. Calculating QCC using UCAP = 125 MW.

Consecutive CCHs	Historical Generation	Historical Storage	UCAP (125 MW)	Draft to Maximize Capacity	Storage After Draft	QCC
	MW	MWh	MW	MWh	MWh	MW
1	50	250	125	75	175	125
2	50		125	75	100	125
3	50		125	75	25	125
4	50		125	25	0	75
Storage empty after 25 MW draft				4-hour average		113

Table A-4. Calculating QCC using UCAP + Planned Outages = 100 MW.

Consecutive CCHs	Historical Generation	Historical Storage	UCAP + Planned Outages (100 MW)	Draft to Maximize Capacity	Storage After Draft	QCC
	MW	MWh	MW	MWh	MWh	MW
1	50	250	100	50	200	100
2	50		100	50	150	100
3	50		100	50	100	100
4	50		100	50	50	100
A 25 MW planned outage decreased QCC by 13 MW				4-hour average		100

The four consecutive CCHs in Table A-3 illustrate how the QCC is limited due to insufficient storage. In Table A-4, the UCAP is reduced by a 25 MW planned outage. This reduced capacity requires less draft from storage in CCHs 1-3 to maximize the QCC in those hours. This reduction in draft provides sufficient storage in CCH 4 to maximize the QCC.

For FS purposes, planned outages may be included or excluded in the QCC calculation at the choice of the Participant pursuant to the requirements in Section 16.2.8 of the Tariff.

A.3 Treatment of Non-Power Constraints

Each Participant is asked to review the methodology and incorporate the specific non-power constraints that are applicable to the individual plants, thus reducing the QCC value of each plant to a level that is believed to reflect the plants operational capability for the upcoming Binding Season. This is done through creating additional constraint logic in the spreadsheet that adds current and future non-power constraints to all 10 Years' worth of evaluation.

It is expected that Participants will include such non-power constraints that accurately reflect their forecasted QCC capability, to facilitate reliance on Storage Hydro Resource QCC values in the Operations Program and for other purposes.

A.4 Treatment of Cascaded and Coordinated Hydro Systems

A Cascaded Dual Plant methodology was also developed specifically for cascaded and coordinated hydro systems. For cascaded hydro resources on the same river systems that are operated in a coordinated manner, when determining the QCC, the useable water in storage at the downstream resource could be enhanced by the operations at the upstream resource, thereby maximizing the contribution of the combined cascaded systems. The Cascaded Dual Plant methodology does not attempt to optimize use of the upstream storage to maximize the combined QCC, but it does allow the downstream plant to utilize the discharge from the upstream plant.

A.5 Form To Complete Storage Hydro Resource QCC

The Hydro QCC Workbook will be completed by the Participant. The workbook is located ~~at an appropriate location~~ on the WPP website.

WESTERN POWERPOOL

Western Resource Adequacy Program

106 Qualifying Contracts

100 – Forward Showing

Revision History

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106	0.1	RAPC Glance Version	Michael O'Brien	3/12/2024
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106	1.0	Board Approved	Rebecca Sexton	9/14/2024
106	2.0	Annual BPM Review	Dave Zvareck	12/23/2025

Table of Contents

106 Qualifying Contracts

1. Introduction

The Qualifying Contracts Business Practice Manual (BPM 106): describes how a contract may be able to receive Qualifying Capacity Contribution (QCC); explains when a Joint Contract Accreditation Form (JCAF) is required to ensure resources are not double counted and QCC is tracked entering and leaving the WRAP Region; outlines the calculations for determining Net Contract QCC; and explains the process of Resource Adequacy (RA) Transfers (the transfer of QCC) between Participants. In addition, BPM 106 includes attestations required for Qualifying Contracts.

1.1. Intended Audience

BPM 106 is intended for Western Power Pool (WPP) Western Resource Adequacy Program (WRAP) Participants and other interested individuals or entities. BPM 106 will be particularly useful for individuals responsible for their organization's Forward Showing (FS) Submittal (see *BPM 108 FS Submittal Process*) that need to ensure their organization's Qualifying Contracts are recorded appropriately.

1.2. What You Will Find in This Manual

BPM 106 includes information on contract eligibility, JCAF requirements, QCC calculations, and RA Transfers.

1.3. Purpose

BPM 106 provides an overview of Qualifying Contracts and the processes for determining QCCs.

1.4. Definitions

All capitalized terms that are not otherwise defined in this BPM have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here.~~

Resource-Specific Capacity Agreements: Bi-lateral agreements that convey capacity from specific resources from one party to another party.

Contracted Capacity Firm Delivery Point: The point up to which the seller of a Qualifying Contract attests to using NERC Priority 6 or NERC Priority 7 point-to-point transmission service or network integration transmission service (NITS) rights to deliver the energy. This is the point from which the Participant is responsible for mapping transmission to load in the FS Submittal (see BPM 108).

FS Demonstration: As defined in *BPM 108 FS Submittal Process*.

Joint Contract Accreditation Form (JCAF): A standard form available ~~at an appropriate location~~ on the Western Power Pool (WPP) website, to be completed by a Participant, to support its claim in an FS Submittal for contracted capacity by demonstrating agreement between the Participant and its selling counterparty regarding details relevant to establishing a Qualifying Capacity Contribution (QCC) value for the capacity contract.

Qualifying Contract: A contract that meets the requirements to be assigned a QCC.

Resource Adequacy Transfer (RA Transfer): The transfer of QCC from one Participant to another in accordance with the requirements of the Tariff and BPM 106.

2. Background

A Participant's FS Submittal shall include a FS Demonstration with the necessary information for each Binding Season to demonstrate the Participant has sufficient capacity and transmission service to satisfy the FS Capacity Requirement and FS Transmission Requirement (see *BPM 108 FS Submittal Process*). The FS Demonstration will include the Participant's demonstration of QCC to meet its FS Capacity Requirement, which can be from Qualifying Resources and from Net Contract QCC. Net Contract QCC may be either positive or negative, to take account of, for example, a Participant's agreements for the sale of capacity to any other party. BPM 106 provides implementing details and supporting requirements to determine the QCC associated with a capacity contract. Note that while contract QCC in the FS Submittal is based on availability during Capacity Critical Hours (CCH), the Operations Program assumes monthly FS Capacity Requirement is met each hour of the Preschedule Day.

JCAF requirements for Resource-Specific Capacity Agreements and Systems Sales are also explained: for contracts between Participants (to allow QCC to be tracked within the WRAP Region), for contracts from Participants to non-Participants (to track QCC leaving the WRAP Region), and for contracts from non-Participants to Participants (to track QCC entering the WRAP Region). BPM 106 also describes how a Participant can transfer some of its Portfolio QCC to help meet another Participant's FS Capacity Requirement via an RA Transfer.

3. Contracts Eligible for QCC value

In accordance with the Tariff, two distinct categories of capacity agreements can qualify to provide QCC: Resource-Specific Capacity Agreements and System Sales.

3.1. Resource-Specific Capacity Agreements

A Resource-Specific Capacity Agreement (for a resource, or group of resources of the same resource type, or percentage contracted of a resource or group of resources of the same resource type) qualifies to provide a QCC if:

i) the contract is specific to an identified generating resource or group of resources;

ii) there is an assurance that the generating capacity will not be used for another entity's F~~orward~~ S~~howing~~ Capacity Requirement or to meet the requirements of any other resource adequacy program;

iii) there is an assurance that the supplier will not fail to deliver in order to meet other commercial obligations;

iv) there is an affirmation that the energy will be delivered on NERC Priority 6 or NERC Priority 7 point-to-point transmission service or network integration transmission service (NITS) rights from the resource to an identified Contracted Capacity Firm Delivery Point; and

v) the identified resource meets the QCC accreditation requirements for its resource type.

The QCC associated with a Resource-Specific Capacity Agreement will be calculated as equivalent to the QCC of the resource(s) identified for the agreement. Resource(s) associated with a Resource-Specific Capacity Agreement must be registered consistent with *BPM 105 Qualifying Resources.* Participants unable to provide sufficient information to fully register the resource may have limitations on the amount of QCC that can be claimed (see *BPM 105* for additional information). Each Resource-Specific Capacity Agreement must have an associated and identified Contract Capacity Firm Delivery Point acknowledged by the seller and buyer, or able to be inferred via a review of the power purchase agreement, depending upon the demonstration required as noted in sections below. If the Contract Capacity Firm Delivery Point is not at a location sufficient to demonstrate firm deliverability from the identified resource to the Participant's load, then the Participant shall make such additional showings of firm transmission service rights as necessary to ensure it meets its Forward Showing Transmission Requirement (see *BPM 108 Forward Showing Submittal Process*). A Participant seeking QCC for a Resource-Specific Capacity Agreement must include a JCAF and/or other attestation, as applicable, as described below and summarized in Section 4 ~~of this BPM~~.

3.1.1. Participant-Buyer – Participant Seller

A JCAF for a Resource-Specific Capacity Agreement where both buyer and seller are Participants allows QCC to be tracked within the WRAP Region. The amount of QCC matches the resource(s) identified and agreed to in the JCAF without the need for the Program Operator to review the contract. This scenario requires an initial one-off JCAF signed by both buyer and seller, and then an annual attestation signed by the Participant buyer that the contract has not changed (see Appendix C - Attestation in lieu of an Annual JCAF).

3.1.2. Participant-Buyer – Non-Participant Seller

For scenarios where a Participant is the buyer of a Resource-Specific Capacity Agreement but a non-Participant is the seller, a demonstration is required to track QCC entering the WRAP Region. BPM 106 considers three sub-scenarios:

i) No JCAF is necessary for Participants required to purchase energy from a resource as available from such resource, including but not limited to a qualifying facility as defined under the Public Utility Regulatory Policies Act, and purchasing 100% of that output (referred to as "100% off take and must take" in Table 1). In lieu of a JCAF, the Participant must attest that it is receiving 100% of the output of such resource and is unable to decline any of it (see Appendix D – Attestation for 100% Off-Take, Must Take Resources).

ii) For Participants voluntarily purchasing 100% of the output of a resource (i.e. not "must take" and referred to as "100% off take" in Table 1):

- When a Participant first claims the capacity or experiences a change in the terms of the power purchase agreement, the Participant buyer may demonstrate the terms in Section 3.1 are met by providing either:
  - A JCAF completed by the Participant buyer and supported by language from the executed power purchase agreement; Participants will provide the Program Operator a copy of the agreement annotated to identify terms relevant to supporting the terms in Section 3.1 (commercial terms related to pricing may be redacted). If the Program Operator determines that any terms within the agreement make it such that the agreement cannot meet any of the requirements in Section 3.1, that agreement will not qualify to provide QCC; or

- A JCAF completed and signed by both the Participant buyer and the non-Participant seller, including a seller attestation as provided in Appendix B – JCAF: Non-WRAP Participant Seller's Attestation.

- In years following the first year, the Participant buyer may make an annual attestation that the terms of the contract have not changed (see Appendix C – Attestation in lieu of an Annual JCAF).

iii) For contracts in which the buyer is purchasing less than 100% of the output of a resource,

- When a Participant first claims the capacity or experiences a change in the terms of the power purchase agreement, the Participant buyer will demonstrate the terms in Section 3.1 are met by providing a JCAF completed and signed by both the Participant buyer and the non-Participant seller, including a seller attestation as provided in Appendix B – JCAF: Non-WRAP Participant Seller's Attestation.

- In years following the first year, the Participant buyer will make an annual attestation that the terms of the contract have not changed (see Appendix C – Attestation in lieu of an Annual JCAF).

3.1.3. Non-Participant-Buyer –Participant Seller

A Resource-Specific Capacity Agreement where a non-Participant is the buyer and the seller is a Participant requires a JCAF to track QCC leaving the WRAP Region. The amount of QCC matches the resource(s) identified and agreed to in the JCAF without the need for the Program Operator to review the contract. This scenario requires a JCAF signed by both the Participant seller, and then an annual attestation by the Participant seller that the contract has not changed (see Appendix C – Attestation in lieu of an Annual JCAF).

3.2. System Sale

A Participant that is part of a System Sale (whether as buyer or seller) must provide a JCAF and/or other attestation, as applicable, as described in Section 4 of this BPM so QCC can be tracked within the WRAP Region (Participant Buyer – Participant Seller), entering the WRAP Region (Participant Buyer – non-Participant Seller), and leaving the WRAP Region (non-Participant Buyer – Participant Seller). Each System Sale must have an associated and identified Contract Capacity Firm Delivery Point acknowledged by the seller and buyer. If the Participant is the buyer and the Contract Capacity Firm Delivery Point is not at a location sufficient to demonstrate firm deliverability from the identified resource to the Participant's load, then the Participant shall make such additional

showings of the required firm transmission service rights as necessary to ensure it meets its Forward Showing Transmission Requirement (see *BPM 108 Forward Showing Submittal Process*).

3.2.1. Participant Buyer – Participant Seller

A System Sale where buyer and seller are Participants will require a JCAF to track QCC within the WRAP Footprint for the first FS Demonstration claiming the System Sale. Subsequent FS Demonstrations will require an attestation by the Participant buyer (see Appendix C – Attestation in Lieu of an Annual JCAF) updated at least once every Forward Showing Year. The QCC of such a System Sale will match the MW value of the agreement as reported in the jointly signed JCAF without the need for the Program Operator to review the contract between Participants. The QCC will accrue to the purchasing Participant's FS Submittal, and the selling Participant will debit the QCC available from its Qualifying Resources associated with the System Sale as reported in its FS Submittal (see *BPM 108 FS Submittal Process)*.

3.2.2. Participant Buyer – Non-Participant Seller

A System Sale for which a Participant is a buyer, but a non-Participant is the seller, will require a jointly signed JCAF (updated at least once every Forward Showing Year) to track QCC entering the WRAP Region and be assigned a QCC upon demonstration of the following supporting conditions:

i) the system capacity sold is surplus to the seller's needs to meet its own loads and other obligations (as attested to with Appendix B – JCAF: Non-Participant Seller's Attestation);

ii) there is an assurance that the seller will not fail to deliver to meet other commercial obligations; and

iii) there is an affirmation that the energy will be delivered on NERC Priority 6 or NERC Priority 7 point-to-point transmission service or NITS rights from the resource to the Contracted Capacity Firm Delivery Point.

Resources associated with qualified System Sales from sellers that are not Participants do not have to be registered unless the Participant buyer is seeking allocation of over/under performance or forced outages in the Operations Program (see variable output System Sales in Section 4.1).

3.2.3. Non-Participant Buyer – Participant Seller

A System Sale where a non-Participant is the buyer and the seller is a Participant will require an initial JCAF signed by the Participant seller for the first FS Demonstration

claiming the System Sale to track QCC leaving the WRAP Region. Subsequent FS Demonstrations will require an attestation by the Participant seller (see Appendix C – Attestation in Lieu of an Annual JCAF) updated at least once every Forward Showing Year. The Participant seller will debit the QCC available from its Qualifying Resources associated with the System Sale as reported in its FS Submittal (see *BPM 108 FS Submittal Process)*. The QCC of such a System Sale will match the MW value of the agreement as reported in the JCAF.

4. Joint Contract Accreditation Forms

With limited exceptions, a Participant shall provide a completed JCAF for each Resource-Specific Capacity Agreement (Table 1) and each System Sale (Table 2) included in its FS Submittal. JCAFs allow the QCC of contracts to be agreed between buyer and seller while avoiding the need for contracts to be reviewed and evaluated by the WRAP. JCAFs will be validated by the Program Administrator and the Program Operator; validation may require additional supporting information from Participants, as determined by the Program Administrator or Program Operator. The JCAF is available on the WPP website and includes sufficient information for the Program Operator to determine the QCC value of the contract. Signatories to the JCAF vary depending upon circumstance, but JCAFs will always be signed by the Participant using the JCAF for demonstration in its FS Submittal. The intent of the JCAF is to ensure capacity is not double counted and that QCC is tracked entering, transferring within, and leaving the WRAP Region. The JCAF is intended to be used for Participant-to-Participant transactions as well as transactions made by Participants with external parties for capacity to meet Participants' FS Capacity Requirement.

Table 1 and Table 2 below show which types of agreements require a JCAF, how frequently a JCAF must be submitted to ensure it is current, and which other forms of attestation may be required in addition to or in lieu of a JCAF, in certain circumstances.

4.1. Allocation of Over/Under Performance or Forced Outages in the Operations Program

In the Operations Program a Participant may be exposed to the impact of contract over/under performance or associated forced outages depending upon the transaction type (for more details see *BPM 202 Sharing Calculation Inputs*). A Participant buyer must identify a contract's transaction type in the JCAF based on the guidance below and indicate whether the Participant buyer assumes the risk associated with under/over performance and forced outages and therefore be allocated those impacts in the Operations Program.

- For Resource-Specific Capacity Agreements any associated over/under performance or forced outages in the Operations Program are allocated to the Participant buyer.
- For fixed output System Sales any associated over/under performance or forced outages in the Operations Program remain allocated to the Participant seller.
- For variable output System Sales any associated over/under performance or forced outages in the Operations Program are allocated to the Participant buyer provided the identified resources meet the QCC accreditation requirements for their resource type.

Table 1 – Resource Specific Capacity Agreements - JCAF and Similar Attestation Requirements and Frequency

				Buyer	
				Participant	**Non-Participant**
Seller	**Participant**			JCAF must be provided first time a contract is claimed; JCAF must be signed by both Participant buyer and Participant seller. No updated JCAF need be submitted thereafter, but the Participant buyer must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.	JCAF must be provided for new or updated contracts; JCAF must be signed by the Participant seller. No updated JCAF need be submitted thereafter if contract terms are unchanged, but the Participant seller must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.
	Non-Participant	**100% off take and must take**	**No JCAF necessary.** Participant buyer must submit Attestation provided in Appendix D.		
		100% off take	In first year contract is claimed, or when contract terms change, provide *either:* • JCAF signed by both Participant buyer and non-Participant seller, *or,* • JCAF signed by buyer and supported by an executed power purchase agreement. No updated JCAF need be submitted thereafter if terms are unchanged, but the Participant buyer must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.		
		Less than 100% off take	In first year claimed, or when contract terms change, provide JCAF signed by both Participant buyer and non-participant seller. No updated JCAF need be submitted thereafter if terms are unchanged, but the Participant buyer must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.		

Table 2 - System Sales - JCAF and Similar Attestation Requirements and Frequency

		Buyer	
		Participant	**Non-Participant**
Seller	**Participant**	JCAF must be provided the first time a contract is claimed; JCAF must be signed by both Participant buyer and Participant seller. No updated JCAF need be submitted thereafter, but the Participant buyer must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.	JCAF must be provided for new and updated contracts; JCAF must be signed by the Participant seller. No updated JCAF need be submitted thereafter, but the Participant seller must provide the attestation shown in Appendix C with each subsequent FS Demonstration, updated at least once per Forward Showing Year.
	Non-Participant	JCAF required with each FS Demonstration, updated at least once per Forward Showing Year signed by both non-Participant seller and Participant buyer, including attestation by non-Participant seller shown in Appendix B.	

The JCAF includes a seller's transmission attestation (for both Participants and non-Participants), in the form shown in Appendix A to this BPM, to affirm the contracts meet the transmission requirements for Resource-Specific Capacity Agreements and System Sale found in Sections 3.1 and 3.2 of this BPM. The JCAF also includes a non-Participant seller's attestation that a System Sale meets the requirements of Section 3.2, in the form shown in Appendix B to this BPM.

If the seller is a:

- Participant; or
- non-Participant in a Resource-Specific Capacity Agreement as to which there is a 100% off-take obligation for the identified resource;

then the Participant buyer need only submit a JCAF the first time a contract is claimed, but will subsequently be required to complete the attestation in the form shown in Appendix C to this BPM as part of its FS Submittal each year thereafter during the life of

the contract, attesting that the contract still meets the requirements affirmed in the JCAF.

5. Calculating Net Contract QCC

The Net Contract QCC for a Participant will be calculated by the Program Operator using the FS Submittal. The Net Contract QCC is a monthly value equal to the sum of the Participant's contract QCCs. In terms of a Participant's monthly QCCs, import contracts (purchases) are additive while exports (sales) are subtractive. The Net Contract QCC may be positive (net supply of capacity) or negative (net obligation of capacity). The Net Contract QCC formula is as follows:

$$Net\ Contract\ QCC = \sum QCC\ of\ all\ Participant\ qualified\ contracts$$

Firm capacity sales by a Participant to parties outside the WRAP Region must be declared and included as a capacity obligation in the Participant's FS Submittal. Non-firm capacity exports will not be deducted from a Participant's FS portfolio but must be curtailable in the operational timeframe, i.e. they must still be curtailable after the determination of any Sharing Event in the Operations Program (*see BPM 201 Operations Timeline*).

6. Resource Adequacy Transfers (RA Transfers)

A Participant may agree with another to transfer some of its Portfolio QCC to meet the other Participant's FS Capacity Requirement. Such transfer is available only between WRAP Participants and must be submitted by both Participants to the Program Operator along with the transmission service arrangement(s) between the two Participants' systems supporting such transfer as part of the FS Demonstration as described in the FS Instruction Manual. RA Transfer transmission must be met with NERC Priority 6 or NERC Priority 7 point-to-point transmission service or NITS rights from the RA Transfer seller's system to the RA Transfer buyer's load; a Contracted Capacity Firm Delivery point for the RA Transfer must be identified, to which the seller will deliver energy with NERC Priority 6 or NERC Priority 7 point-to-point transmission service or NITS rights and from which the Buyer will be responsible for demonstrating NERC Priority 6 or NERC Priority 7 point-to-point transmission service or NITS rights as further detailed in the FS Submittal Instruction Manual and as with other contracts and resources.

Upon verification, each RA Transfer shall result in an adjustment to the Portfolio QCC values of the transferor and transferee Participants. Specifically, the amount of each RA Transfer will be added to the purchasing Participant's Portfolio QCC and subtracted from the selling Participant's Portfolio QCC. The contracts for these transfers will be provided

to the Program Operator. For Participants engaged in multiple RA Transfers, as either a purchaser or seller, the overall adjustment to the Participant's Portfolio QCC will be determined by the following formula:

$$Total\ RA\ Transfer = \sum Participant\ RA\ transfer\ contracts$$

Appendix A – JCAF: Seller's Transmission Attestation for both Participants and Non-Participants

I, the undersigned, who as [title], serve as a senior official of [seller], hereby attest to having NERC Priority 6 or NERC Priority 7 firm point-to-point transmission service rights or network integration transmission service rights (NITS) to deliver the capacity that is the subject of this Joint Contract Accreditation Form to the identified Contracted Capacity Firm Delivery Point, or that such capacity will be deliverable to the identified Contracted Capacity Firm Delivery Point on a path with counterflow from a Qualifying Resource to load on NERC Priority 6 or NERC Priority 7 point-to-point transmission service or network integration transmission service (NITS) rights.

Appendix B – JCAF: Non-WRAP Participant Seller's Attestation

I, the undersigned, who as [title], serve as a senior official of [seller], hereby attest that the capacity subject to the contract is not used for another entity's resource adequacy requirements, is surplus to [seller's] estimated need and that the energy will not fail to be delivered in order to meet [seller's] other commercial obligations.

Appendix C – Attestation in lieu of an Annual JCAF

I, the undersigned, who as [title], serve as a senior official of [Participant buying from another Participant OR Participant selling to a non-Participant OR Participant buying resource-specific contract from a non-Participant], hereby attest that terms of the contract between [seller] and [buyer] with Contract ID [identifying # from Participant's FS Submittal] have not changed since the latest review (JCAF or power purchase agreement review) on [date of last demonstration].

Appendix D – Attestation for 100% Off Take, Must Take Resources

I, the undersigned, who as [title], serve as a senior official of [Participant], hereby attest that any resources claimed within [Participant's] FS Submittal that are not owned and operated by [Participant] are resources where [Participant] receives 100% of the output of the resource without an option to decline to take any of such output.

WESTERN POWERPOOL

Western Resource Adequacy Program

107 Forward Showing Deficiency Charge

100 – Forward Showing

Revision History

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Table of Contents

107 Forward Showing Deficiency Charge

1. Introduction

A Participant that submits a Forward Showing Demonstration that the Program Operator or Program Administrator finds to be deficient, and that does not cure that deficiency prior to the end of the prescribed Cure Period, is assessed a Deficiency Charge. ~~This Forward Showing Deficiency Charge Business Practice Manual (~~BPM 107~~)~~ provides implementing details and practices relevant to the calculation of the Deficiency Charge, and allocation of the revenues received from collection of Deficiency Charges.

1.1 Intended Audience

BPM 107 is intended for the Western Power Pool (WPP) Western Resource Adequacy Program (WRAP) Participants and other interested individuals or entities. BPM 107 is particularly useful for those individuals that are responsible for, and support, participation in the Forward Showing Program.

1.2 What You Will Find in This Manual

BPM 107 contains information regarding the calculation of the Deficiency Charge, including calculation of Capacity Deficiencies, Transmission Deficiencies, and Deficiency Charges, and allocation of revenues received from the collection of Deficiency Charges. Certain adjustments to the Deficiency Charge that are available during the Transition Period are addressed in *BPM 109 Forward Showing Transition Period*.

1.3 Purpose

To provide implementing details and practices relevant to the calculation of the WRAP Deficiency Charge.

Nothing in ~~this~~ BPM 107 changes in any way the exclusive authority of the independent Board of Directors, under Section 3.1 of the Tariff, to approve and direct WPP to file Tariff amendments and the independent Board's ultimate authority over all aspects of the WRAP.

1.4 Definitions

All capitalized terms that are not otherwise defined in ~~this~~ BPM 107 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here.~~

Catastrophic Failure Monthly Report: As defined in *BPM 108 Forward Showing Submittal Process*.

Cure Period: As defined in *BPM 108 Forward Showing Submittal Process*.

Monthly P50 Peak Load Forecast: The P50 Peak Load Forecast for each month in a given Binding Season.

Monthly Transmission Exception Check-In: As defined in *BPM 108 Forward Showing Submittal Process.*

Summer % Deficit: A value greater than zero that is the Aggregate Capacity Deficiency for the WRAP as a whole for a Summer Season divided by the sum of the maximum Monthly P50 Peak Load Forecasts for each Participant for that Summer Season.

Winter % Deficit: A value greater than zero that is the Aggregate Capacity Deficiency for the WRAP as a whole for a Winter Season divided by the sum of the maximum Monthly P50 Peak Load Forecasts for each Participant for that Winter Season.

2. Background

The WRAP is a regional resource adequacy program in which Participants demonstrate, in advance of a defined season when resources may need to be deployed, that they have sufficient resources to meet their expected peak loads and a reserve margin. The WRAP imposes standards and requirements related to such matters as the resources that qualify to meet resource adequacy objectives, the calculation of peak loads, and the required minimum reserve margin. Each Participant is required to submit a Forward Showing Submittal in advance of each Binding Season to demonstrate a minimum required quantity of capacity, known as the FS Capacity Requirement, and a minimum required quantity of transmission service rights, known as the FS Transmission Requirement. The WRAP provides for imposition of significant charges on Participants that do not show in advance sufficient resources to meet their loads. Any Participant that fails to cure identified deficiencies in its Forward Showing Submittal is assessed a Deficiency Charge. Specifically, if a Participant fails during the Cure Period to demonstrate that it has resolved any identified deficiencies in either or both of its FS Capacity Requirement and/or its FS Transmission Requirement, the Participant will be assessed a Deficiency Charge for each Month for which a deficiency is identified.

3. Calculating the Deficiency Charge

3.1 Calculating the Deficiency

Deficiencies are calculated for each Month of a Binding Season, in accordance with the following:

Definition: Monthly Deficiency

$$\boldsymbol{Participant's\ Monthly\ Capacity\ Deficiency} = \boldsymbol{Maximum}(\boldsymbol{Monthly\ FS\ Capacity\ Requirement} - \boldsymbol{Monthly\ Portfolio\ QCC}, \mathbf{0})$$

$$\boldsymbol{Participant's\ Monthly\ Transmission\ Deficiency} = \boldsymbol{Maximum}((\mathbf{75\%} \times \boldsymbol{Monthly\ FS\ Capacity\ Requirement}) - (\boldsymbol{Monthly\ Transmission\ Demonstrated} + \boldsymbol{Approved\ Monthly\ Transmission\ Exemptions}), \mathbf{0})$$

Where:

Monthly FS Capacity Requirement is reduced to account for approved catastrophic resource failure exemption requests submitted at the time of Forward Showing Submittal (see *BPM 108 Forward Showing Submittal Process*)

and

Monthly Transmission Demonstrated is the amount of transmission service rights submitted by a Participant per the requirements in Tariff Section 16.3 and validated by the Program Administrator as per *BPM 108 Forward Showing Submittal* for each month.

Then:

$$\boldsymbol{Monthly\ Deficiency} = \boldsymbol{Maximum\ of}\ (\boldsymbol{Monthly\ Capacity\ Deficiency}, \boldsymbol{Monthly\ Transmission\ Deficiency})$$

The Transition Period rules, as discussed in *BPM 109 Forward Showing Transition Period* may, depending on a Participant's circumstances, change or adjust calculation of Deficiencies during the Transition Period.

3.2 Calculating the Deficiency Charge

Deficiency Charge calculations take account of multiple Monthly Deficiencies within a Forward Showing for a single Binding Season, and multiple Deficiencies across a Forward Showing Year, consisting of a Summer Season and the immediately succeeding Winter Season, in accordance with the following formulas and principles. The formulas are drafted to apply to an individual Participant as to its Forward Showings for a Forward Showing Year.

The Monthly Deficiency with the highest MW value in a Forward Showing for a Summer Season shall be assessed a Deficiency Charge as calculated per Formula 1.

Formula 1: Maximum Summer Month
$$\boldsymbol{Max\ Monthly\ Summer\ Deficiency} \times \boldsymbol{Annual\ CONE} \times \mathbf{1000} \times \boldsymbol{Summer\ Season\ Annual\ CONE\ Factor}$$
where the Annual CONE is expressed as a dollars per kW-year calculated in accordance with Section 3.3.1, and where Summer Season Annual CONE Factor is determined in accordance with Section 3.3.2.

Any other Monthly Deficiency in the Participant's Forward Showing for the same Summer Season shall be assessed a Deficiency Charge as calculated per Formula 2.

Formula 2: Other Summer Months
$$\boldsymbol{Additional\ Summer\ Deficiency} \times (\boldsymbol{Annual\ CONE}\ /\mathbf{12}) \times \mathbf{1000} \times \mathbf{200\%}$$
where the Annual CONE is expressed as a dollars per kW-year calculated in accordance with Section 3.3.1.

Any Monthly Deficiency in the Forward Showing for the immediately succeeding Winter Season with a higher MW value than the highest MW value of the Monthly Deficiency in the Summer Season shall be assessed a Deficiency Charge on the incremental MW value above the Summer Season as calculated per Formula 3.

Formula 3: Maximum Winter Month
$$\boldsymbol{Maximum\ of}\ (\boldsymbol{Max\ Winter\ Deficiency} - \boldsymbol{Max\ Summer\ Deficiency}, \mathbf{0}) \times \boldsymbol{Annual\ CONE} \times \mathbf{1000} \times \boldsymbol{Winter\ Season\ Annual\ CONE\ Factor}$$
where the Annual CONE is expressed as a dollars per kW-year calculated in accordance with Section 3.3.1, and where Winter Season Annual CONE Factor is determined in accordance with Section 3.3.2.

If there is a Monthly Deficiency in the Winter Season with a higher MW value than the highest MW value of any Monthly Deficiency in the Summer Season, the Monthly

Deficiency with the highest MW value in the Summer Season shall be assessed an additional Deficiency Charge calculated per Formula 2.

Any other Monthly Deficiency in the Participant's Forward Showing Submittal for the same Winter Season shall be assessed a Deficiency Charge as calculated per Formula 4.

Formula 4: Other Winter Months
$\boldsymbol{Additional\ Winter\ Capacity\ Deficiency} \times (\boldsymbol{Annual\ CONE}/12) \times 1000 \times 200\%$
where the Annual CONE is expressed as a dollars per kW-year calculated in accordance with Section 3.3.1.

The Transition Period rules, as discussed in *BPM 109 Forward Showing Transition Period* may, depending on a Participant's circumstances, change or adjust calculation of Deficiency Charges during the Transition Period.

Should a Subregion fail to achieve Critical Mass in a Binding Season, Participants electing to participate as Non-Binding Participants will not be subject to Deficiency Charges under the FS Program as described in Section 7~~*BPM 109 Forward Showing Transition Period*~~.

3.3 Determining Certain Components of the Deficiency Charge Calculation

3.3.1 Cost of New Entry

The Cost of New Entry, also known as CONE, is used in the Deficiency Charge calculation as an indication of the type of cost a deficient Participant avoids by not having sufficient capacity to serve its peak loads. It is not intended to reflect any Participant's actual avoided capacity costs or to establish any precedent as to the types of resources any Participant can or should obtain to meet their marginal capacity needs, or that any type of resource is the expected marginal capacity resource in the WRAP Region or any Subregion.

In accordance with the Tariff, CONE is the estimated cost of a hypothetical new peaking natural gas-fired generation facility. The CONE estimate is based on publicly available information relevant to the estimated annual capital and fixed operating costs of a hypothetical natural gas-fired peaking facility. The estimate of CONE does not consider net revenue from the sale of capacity, energy, or ancillary services from the hypothetical facility, nor does it consider variable operating costs necessary for generating energy.

The Program Administrator posts on its website the current value of CONE, along with key supporting calculations and information that materially affects the estimate. The Program Administrator may initiate a change to CONE at any time. The Program Administrator reviews the CONE estimate annually, but is not required to change the CONE annually, and can initiate a change to CONE more frequently than annually. Any proposed changes in the CONE are subject to review through the stakeholder process for program rule changes as outlined in *BPM 301 Program Review Committee Workplan Development and Approval*, *BPM 302 Program Review Committee Proposal Development and Consideration,* and *BPM 303 Expedited Review Process.*

3.3.2 Summer Season and Winter Season Annual CONE Factors

The Deficiency Charge calculation uses a CONE Factor to reflect that individual Participant deficiencies are of even greater concern when the Region as a whole is expected to be short of targeted capacity needs. Per the Tariff, there are separate CONE Factors for each Winter Season and each Summer Season, depending on the total deficiency of the WRAP Region.

The Summer Season Annual CONE Factor varies based on the ratio ("Summer % Deficit") of the Aggregate Capacity Deficiency for the WRAP Region (all Participants) that Summer Season, divided by the aggregated maximum Monthly P50 Peak Load Forecast of all Participants for the Summer Season, as follows:

1) If the Summer % Deficit is less than or equal to 1%, the Summer Season Annual CONE Factor = 125%

2) If the Summer % Deficit is greater than 1% but less than or equal to 2%, the Summer Season Annual CONE Factor = 150%

3) If the Summer % Deficit is greater than 2% but less than or equal to 3%, the Summer Season Annual CONE Factor = 175%

4) If the Summer % Deficit is greater than 3%, the Summer Season Annual CONE Factor = 200%

The Winter Season Annual CONE Factor varies based on the ratio ("Winter % Deficit") of the Aggregate Capacity Deficiency for the WRAP Region (all Participants) that Winter Season, divided by the aggregated maximum Monthly P50 Peak Load Forecast of all Participants for the Winter Season, as follows:

1) If the Winter % Deficit is less than or equal to 1%, the Winter Season Annual CONE Factor = 125%

2) If the Winter % Deficit is greater than 1% but less than or equal to 2%, the Winter Season Annual CONE Factor = 150%

3) If the Winter % Deficit is greater than 2% but less than or equal to 3%, the Winter Season Annual CONE Factor = 175%

4) If the Winter % Deficit is greater than 3%, the Winter Season Annual CONE Factor = 200%

If there is no deficiency in the Summer or Winter Binding Season, there is no Summer % Deficit or Winter % Deficit.

If a Participant incurred any FS Deficiency Charges in a Forward Showing Year, then for the immediately following Forward Showing Year, both the Summer Season Annual CONE Factor and the Winter Season Annual CONE Factor shall be 200% for such Participant.

A detailed example is provided in the FS Deficiency Charge Examples document, which is posted on the WPP website.

4. Dispute Resolution Process

Nothing in this BPM limits the ability of a Participant that believes it has been assessed a Deficiency Charge in error from raising such concerns with the Program Administrator staff or invoking the Tariff dispute resolution process.

5. Timing of Deficiency Charge Revenue Collection

Any Deficiency Charges will be calculated and invoiced to deficient Participants within 45 Days following the end of the Cure Period for each season, or seven Days following a Participant's failure to timely submit a required Catastrophic Failure Monthly Report or Monthly Transmission Exception Check-In (see *BPM 108 Forward Showing Submittal Process*).

6. Allocation of Revenues from Deficiency Charges

To the extent WPP collects payment of Deficiency Charges for a Binding Season, revenues from those collected Deficiency Charges will be allocated among those Participants with no Deficiency Charges for that Binding Season, pro rata based on each non-deficient Participant's share of all such Participants' Median Monthly P50 Peak Loads consistent with Schedule 1 of the Tariff. WPP will distribute this revenue only after the deadline for Internal Dispute Resolution request for a Deficiency Charge has passed and no Internal Dispute Resolution request has been requested; or, alternatively, after a timely request for dispute resolution has been made and all

proceedings related to that dispute resolution have been exhausted. Participants have no entitlement to receive revenues from Deficiency Charges except to the extent such charges are assessed, invoiced, and collected by WPP.

The Transition Period rules, as discussed in *BPM 109 Forward Showing Transition Period* may, depending on a Participant's circumstances, change, or adjust the allocation of Deficiency Charge revenues during the Transition Period.

7. Critical Mass and Non-Binding Participation

After the Transition Period as described in *BPM 109 Transition Period*, in the scenario that a Subregion fails to meet a sufficient amount of load or number of Participants for a Participant's selected Transition Binding Season or any future Binding Seasons, Participants within the affected Subregion may elect to be Non-Binding for the season where Critical Mass is not achieved. Table 1 below shows the minimum values for the amount of load and number of Participants needed to meet Critical Mass by Subregion.

Table 1. Threshold load and number of Participants for Critical Mass

Threshold Values	Northwest Subregion	Southwest and East Subregion
Load Volume	20 GW	15 GW
Participant Count	3	3

The Program Administrator will contact the Participant by emailing its Resource Adequacy Participant Committee (RAPC) representative alerting the Participant if Critical Mass in one or more of the Subregions that Participant operates in is not reached. Once the Program Administrator has notified a Subregion that Critical Mass has not been achieved, Participants within that Subregion have 30 days to provide notice from the Participant RAPC representative to WPP by email at wrap@westernpowerpool.org indicating whether they intend to participate as Non-Binding Participants in the Subregion(s) for that Binding Season.

A Participant electing to participate in a Non-Binding manner for a Binding Season outside of the Transition Period will operate under the guidelines described here:

1. The Participant will not be subject to Deficiency Charges under the FS Program, or to mandatory Holdback Requirements as a result of a positive Sharing Calculation Result, mandatory Energy Deployments, or Delivery Failure Charges under the Operations Program.

2. The Participant will be subject to all other FS Program requirements, including the requirement to timely provide data in connection with the Advance Assessment, the requirement to timely provide FS Submittals, and Operations

Program requirements as appropriate and detailed in *BPM 210 Binding and Non-Binding Participation in Operations Program*.

3. The Participant may participate in the Operations Program as outlined in *BPM 210 Binding and Non-Binding Participation in Operations Program.*

WESTERN POWERPOOL

Western Resource Adequacy Program

108 Forward Showing Submittal Process

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
108	0.1	RAPC Glance Version	Michael O'Brien	12/5/2024
108	0.2	Public Comment	Michael O'Brien	12/11/2024
108	0.3	RAPC & PRC Review	Michael O'Brien	2/14/2024
108	0.4	RAPC Endorsement	Michael O'Brien	2/22/2024
108	0.5	Board Approval	Michael O'Brien	2/29/2024
108	1.0	Board Approved	Michael O'Brien	3/7/2024
108	1.1	Board Approval	Elise Mousseau	9/25/25
108	2.0	Annual BPM Review	Danie Williams	12/23/2025

Table of Contents

108 Forward Showing Submittal Process

1. Introduction

Forward Showing (FS) Submittal Process Business Practice Manual (BPM) 108 describes when and how each Participant provides its projected load and resource portfolio data to meet the Western Resource Adequacy Program (WRAP) FS Capacity Requirements and FS Transmission Requirements in the months of the Binding Seasons. The Western Power Pool's (WPP) FS Program is the forward-looking planning portion of the WRAP that aims to ensure the WRAP footprint has sufficient capacity to adequately serve projected peak load under a variety of possible scenarios. The FS Program includes the Advance Assessment (see *BPM 101 Advance Assessment*) that recommends FS Planning Reserve Margins (FSPRM) for Board approval and provides Qualifying Capacity Contribution (QCC) values for registered resources (see *BPM 105 Qualifying Resources*). The FSPRMs are applied to the P50 load forecasts of each Participant to set the FS Capacity Requirement for each month of a Binding Season. The FS Capacity Requirements shall be met by QCC from Qualified Resources and delivered consistent with the Tariff's FS Transmission Requirements, at a minimum.

1.1. Intended Audience

BPM 108 is intended for WRAP Participants and other interested individuals or entities. BPM 108 is particularly useful for those individuals responsible for the Participant Organization's FS Submittal, which includes the FS Demonstration of the FS Capacity Requirement and FS Transmission Requirement, along with FS supporting materials on Qualifying Resource Capability Testing, treatment of Thermal Resources without North American Electric Reliability Corporation (NERC) Generating Availability Data System (GADS) data, Hydro Resource QCC results, late registered resources, and Transition Period exceptions (Excused Transition Deficits and Joint Contract Accreditation Forms (JCAFs)).

1.2. What You Will Find in This Manual

This document describes: the FS Deadline, Deficiency Notices and FS Cure Deadline Dates~~the FS Submittal and Cure Period~~; the required FS Submittal materials, including the FS Demonstration and FS supporting materials, along with associated Senior Official Attestations; and Program Operator and Program Administrator review of Participants' FS Submittals.

1.3. Purpose

BPM 108 is intended to assist Participants in completing their FS Submittals, including the FS Demonstration and the required supporting material, on or before the FS Deadline for the applicable Binding Season.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 108 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 108 are defined here.~~

Catastrophic Failure Monthly Report: A demonstration by a Participant with an approved catastrophic resource failure exemption that either the circumstances necessitating the exception have not changed or that Qualifying Resources have become available, and the Participant has acquired them and no longer requires the exception.

Cure Deadline: The date 120 D~~d~~ays after the FS Deadline after which any uncured deficiencies in a Participant's FS Submittal shall be assessed a FS Deficiency Charge.

Cure Period: The time period 120 D~~d~~ays after the FS Deadline during which a Participant shall submit revisions to its FS Submittal to fully cure all identified deficiencies.

FS Demonstration: A demonstration that a Participant has met satisfactorily its FS Capacity Requirement and FS Transmission Requirement.

FS Instruction Manual: A set of instructions available on the WPP website.

Monthly Transmission Exception Check-In: A demonstration by a Participant with an approved Monthly Transmission Exception for Enduring Constraints or Future Firm ATC Expected that its inability to meet the FS Transmission Requirement has not changed.

2. F~~orward S~~howing Deadline, Deficiency Notices and FS Cure Deadline Dates~~Submittal and Cure Period~~

The Forward Showing Program has two Binding Seasons: The Summer Season and the Winter Season. The ~~FS Submittal dates (~~FS Deadline, serving of Deficiency notices, and FS Cure Deadlines~~)~~ for the ~~Winter Season and~~ Summer Season and Winter Season ~~are shown in Table 1. All submission deadlines are at~~ are 5:00 pm Pacific Prevailing Time (PPT) on the respective date indicated in Table 1. The Program ~~Operator~~ Administrator shall serve a deficiency notice~~s~~ to each ~~a~~ Participant ~~that~~where one or more deficiencies have been identified as ~~has not submitted any~~ part of the FS Submittal ~~by the FS Deadline (~~by 5:00 pm PPT on the respective date indicated in Table 1~~)~~. Participants served a deficiency notice ~~will have until 5:00 pm PPT on the dates show in Table 1 to~~may cure their deficiencies by resubmitting their FS Submittal with the missing or correct data by 5:00 pm PPT on the respective date indicated in Table 1. Deficiencies

uncured by the FS Cure Deadline will be subject to the FS Deficiency Charge (see *BPM 107 Forward Showing Deficiency Charge*).

Table 1. FS Deadline, ~~orward Showing Submittal~~Deficiency Notices and FS Cure ~~Period~~Deadline Dates

	Winter Season	Summer Season
FS Deadline	March 31 of each Year	October 31 of each Year
Program ~~Operator~~ Administrator serve Deficiency notices	By May 30 of each Year	By December 30 of each Year
FS Cure Deadline	July 29 of each Year	February 28 of each Year

3. Forward Showing Submittal Materials

A Participant's FS Submittal shall include a FS Demonstration with the necessary information for each Binding Season to demonstrate the Participant has sufficient capacity and transmission service to satisfy the FS Capacity Requirement and FS Transmission Requirement. The FS Demonstration shall include the Participant's: load forecast for the upcoming Binding Season (see *BPM 103 Forward Showing Capacity Requirement*); demonstration of Qualifying Capacity Contribution (QCC) to meet its FS Capacity Requirement which can be from Qualifying Resources or contracts; demonstration of the FS Transmission Requirement needed for the reliable delivery of the QCC of the Participant's Qualifying Resources and Contracts to the Participant's load; applicable Monthly Transmission Exception requests and associated Senior Official Attestations; and a Senior Official Attestation for the FS Demonstration. In addition to the FS Demonstration, the FS Submittal shall include supporting FS materials including information on Qualifying Resource Capability Testing, Thermal Resources without GADS data, Hydro Resource QCCs and forced outages, late registered resources, and Transition Period exceptions.

3.1. FS Demonstration

As described in the FS Instruction Manual, a Participant must provide the Program Operator with the following information on loads, Qualifying Resources, contracts, and transmission to demonstrate it has satisfactorily met the FS Capacity Requirement and FS Transmission Requirement. A Participant's FS Demonstration shall be accompanied by the Senior Official Attestation found in Appendix A – FS Demonstration Attestation. The Program Operator determines whether a Participant has met its FS Capacity

Requirement and FS Transmission Requirement using the method described in Appendix G – FS Summary.

3.1.1. Loads

Each Participant shall provide the following FS Demonstration load information as described in the FS Instruction Manual:

- Load name assigned for identification purposes and used for transmission mapping
- Balancing Authority Area (BAA) in which the load is located
- The load point of delivery (POD) on the transmission system
- Forecasted monthly peak demand (see methodology in *BPM 103 Forward Showing Capacity Requirement*)

A Participant shall include all loads in its FS Demonstration for which it is responsible as well as documenting all loads it seeks to exclude (see *BPM 103 Forward Showing Capacity Requirement*): i.e. all loads within the western interconnection for which it is the LRE (or the exclusive wholesale electricity provider to the LRE) that are not covered by another resource adequacy program.

A Participant responsible for loads in two Subregions seeking to use the lower ~~m~~Monthly FSPRM may submit a single FS Submittal if the Participant can demonstrate sufficient firm transmission service from the load in the Subregion with the lower ~~m~~Monthly FSPRM to the load in the Subregion with the higher ~~m~~Monthly FSPRM. The Participant will demonstrate NERC Priority 6 or NERC Priority 7 firm point-to-point (PTP) transmission service or network integration transmission service (NITS) in the quantity equal to the difference between the two FSPRMs multiplied by the amount of load in the Subregion with the higher FSPRM. For example, if Region A has a FSPRM of 20% in July and Region B has a FSPRM of 15% in July, and Participant has 1000 MW of load in Region A, the Participant will demonstrate (20% - 15%) * 1,000 MW or 50 MW of firm transmission from its load in Region B to its load in Region A. This transmission shall be distinct from any transmission demonstrated for delivering Qualifying Resources to participant load. See *BPM 103 Forward Showing Capacity Requirement* for information on calculating the FS Capacity Requirement in circumstances where loads from two Subregions are included in a single FS Submittal. In addition, a Participant responsible for loads in two Subregions seeking to use the higher monthly FSPRM may also submit a single FS Submission if the Participant can sign the FS Demonstration attestation in Appendix A.

All load submitted by a Participant within a single FS Demonstration must be able to be served interchangeably by all Qualifying Resources and Qualifying Contracts in that

same FS Demonstration, without the expectation that additional transmission rights will be required to deliver resources to load. In accordance with this, a Participant may be required to submit separate FS demonstrations, even as to loads residing in the same Subregion, if the Program Administrator determines it is not practicable to treat such loads as if they can share in load and resource diversity for reasons that may diminish the integrity of WRAP reliability metrics, including but not limited to, if the Participant is responsible for (i) loads that are geographically distinct; (ii) loads that are separated by constrained transmission paths; or (iii) loads and resources that are not operated collectively (see *BPM 103 FS Capacity Requirement*).

Participant loads that cannot be served with a common set of Qualifying Resources and Qualifying Contracts shall therefore be submitted in separate FS Demonstrations. Each FS Demonstration will have a unique FS Capacity Requirement and a unique FS Transmission Requirement, and each of those two requirements shall be met individually and separately from any other FS Demonstrations submitted by a Participant.

3.1.2. Qualifying Resources

As part of the FS Demonstration, each Participant shall submit Qualifying Resources to satisfy the FS Capacity Requirement as described in the FS Instruction Manual. Qualifying Resources can be fully or partially owned by the Participant. The Participant shall use QCCs supplied by the Program Operator as part of the Advance Assessment (see *BPM 101 Advance* Assessment) unless the resource is being registered late (see *BPM 105 Qualifying Resources)*. The components of a hybrid resource should be described separately (for example, solar separately from a battery) and the overall limits of the facility considered when submitting the QCC for each component (see *BPM 101 Advance Assessment -Data Request Instruction Manual* for hybrid resource limitations). The Qualifying Resource information provided in the FS Demonstration should be consistent with the information provided by the Program Operator as a result of Resource Registration (see *BPM 105 Qualifying Resources*).

If a Participant experiences a catastrophic Qualifying Resource failure and is unable to replace the QCC on commercially reasonable terms prior to the FS Deadline, the Participant can seek an exception by submitting the attestation in Appendix B – Catastrophic Resource Failure Exception. For each month following the FS Deadline that a Participant sought a catastrophic resource failure exception, the Participant shall complete a Catastrophic Failure Monthly Report (available on the WPP website) demonstrating either:

- the circumstances necessitating the exception have not changed; or

- that Qualifying Resources (either the ones experiencing the catastrophic failure or other resources) have become available, and the Participant has acquired them and no longer requires the exception.

The Catastrophic Failure Monthly Report will be due on the last day of each Month and will cover any catastrophic Qualifying Resource exception requested for the upcoming (or ongoing) Binding Season, except the Month directly preceding the earliest Month that is the subject of catastrophic Qualifying Resource request. For example, if a Participant has requested a catastrophic Qualifying Resource exemption for July and August of 2035 at the FS Deadline (October 31, 2034), such Participant will submit a Catastrophic Failure Monthly Report for the July and August exception requests on or before the last days of November and December, 2034, and on or before the last days of January, February, March, April, and May, 2035, but need not submit such report for the July exception request on the last day of June 2035. The Participant will submit a Catastrophic Failure Monthly Report solely as to the August exception request on or before the last day of June 2035.

If at any time~~, the Participant~~ there is a change in the circumstances that necessitated the exception such that the reasons for the exception no longer exist, or the Participant acquires other Qualifying Resources, the Participant will describe and demonstrate such acquisition in the next Catastrophic Failure Monthly Report, and upon acceptance of the demonstration, need not continue to provide a Catastrophic Failure Monthly Report for the exception no longer needed. Failure to submit a required Catastrophic Failure Monthly Report will result in an assessment of a Deficiency Charge, unless the deficiency is cured with seven days of notice of non-compliance.

The Program Operator and Program Administrator will seek to inform the Participant whether its exception request has been accepted within 14 Days of receiving the request. The impact of a successful exception request is explained in *BPM 107 Forward Showing Deficiency Charge*. If a Participant submits a request for exception that WPP denies in whole or in part, the Participant may appeal such denial to the Board of Directors. To make such appeal, the Participant should submit an appeal, in the form outlined on the WPP website, including all information the Participant considers necessary to support its view that WPP erred in denying the requested exception. ~~-~~Any such appeal must be submitted no later than 14 Days after WPP's denial of the exception request. The Board may request that the Participant provide such additional information as the Board considers necessary for its action on the appeal. The timing of the Board's action on an appeal is in the Board's discretion.

3.1.3. Contracts

Each Participant shall also provide notification and representation of contractual purchases and sales as described in *BPM 106 Qualifying Contracts* and in the FS Instruction Manual.

3.1.4. Transmission

Each Participant shall demonstrate the FS Transmission Requirement. As described in the FS Instruction Manual, a Participant shall demonstrate it has secured transmission rights sufficient to deliver a MW quantity equal to at least 75% of the MW quantity of its FS Capacity Requirement. The FS Transmission Requirement must be met with NERC priority 6 (NITS from resources not designated as network resources or conditional firm long-term firm PTP) or NERC priority 7 firm PTP transmission service or NITS from the Participant's Qualifying Resource(s) or from the delivery points for the Qualifying Resources identified for its Net Contract QCC (or for its RA Transfer) to the Participant's load. The FS Demonstration shall include information on a Participant's transmission service reservations that it plans to utilize in the upcoming Binding Season to meet its FS Transmission Requirement. The FS Demonstration shall also map Qualifying Resources (see Section 3.1.2) and contracts (see Section 3.1.3) to a Participant's loads (see Section 3.1.1) using the transmission service reservation information provided, as described in the FS Instruction Manual. A Participant that has Qualifying Resource in its balancing area, but is not a transmission service provider – and is therefore unable to provide transmission service reservation information – will attest that it has the transmission rights from the generation to the load on its system (see Appendix J – Transmission Rights Attestation).

3.1.4.1. Transmission Exceptions

If a Participant's FS Demonstration does not include the required transmission service reservations to satisfy the FS Transmission Requirement, the Participant may request Monthly Transmission Exceptions. As described in more detail below, there are four categories of Monthly Transmission Exception available to a Participant [terminology mirrors terms used in standard form Open Access Transmission Tariffs (OATTs) and on Open Access Same-time Information Systems (OASIS)]:

- Enduring Constraints;
- Future Firm Available Transmission Capability (ATC) Expected;
- Transmission Outages and Derates; and
- Counterflow of a Qualifying Resource.

All Participants requesting a Monthly Transmission Exception are responsible for submitting the completed Transmission Exception request form found on the WPP website, along with the Senior Official Attestation found in Appendix C – Monthly

Transmission Exception General Attestation – as part of their FS Submittal along with their FS Demonstration.

The Program Operator will review a Participant's Monthly Transmission Exceptions and notify the Participant of the status of its Monthly Transmission Exceptions for each month requested by 5:00 pm PPT on the 60th day after the FS Deadline.

If a Monthly Transmission Exception is denied (either because it is invalid or because circumstances changed and transmission has become available during the Program Operator's review of the Monthly Transmission Exception), the Participant will have the opportunity to cure its Transmission Deficiency on or before the last day of the Cure Period established for the relevant FS Submittal. The Participant may also appeal the rejection to the Board.

The Program Operator and Program Administrator will seek to inform the Participant whether its exception request has been accepted within 14 Days of receiving the request. If a Participant submits a request for exception that WPP denies in whole or in part, the Participant may appeal such denial to the Board of Directors. To make such appeal, the Participant should submit an appeal, in the form outlined on the WPP website, including all information the Participant considers necessary to support its view that WPP erred in denying the requested exception. Any such appeal must be submitted no later than 14 Days after WPP's denial of the exception request. The Board may request that the Participant provide such additional information as the Board considers necessary for its action on the appeal. The timing of the Board's action on an appeal is in the Board's discretion.

For each month following the FS Deadline that a Participant sought a Monthly Transmission Exception for Enduring Constraints or Future Firm ATC Expected, the Participant shall complete a Monthly Transmission Exceptions Check-in (available on the WPP website) demonstrating either:

- the circumstances necessitating the exception have not changed; or
- transmission has become available and the Participant has acquired it; or
- the Participant has acquired a different Qualifying Resource with the necessary firm transmission and no longer requires the Monthly Transmission Exception.

The Monthly Transmission Exception Check-Ins will be due on the last day of each Month and will cover any Monthly Transmission Exceptions requested for the upcoming (or ongoing) Binding Season, except the Month directly preceding the earliest Month that is the subject of the Monthly Transmission Exception request. For example, if a Participant has requested a Monthly Transmission Exception for July and August of

2035 at the FS Deadline (October 31, 2034), such Participant will submit a Monthly Transmission Exception Check-In for the July and August exception requests on or before the last days of November and December, 2034, and on or before the last days of January, February, March, April, and May, 2035, but need not submit such check-in or the July exception request on the last day of June 2035. The Participant will submit a Monthly Transmission Exception Check-In solely as to the August exception request on or before the last day of June 2035.

If at any time, the Participant either acquires the necessary transmission or acquires a different resource and associated transmission, the Participant will describe and demonstrate such acquisition on the next Monthly Transmission Exception Check-In, and upon acceptance of the demonstration, need not continue to provide Monthly Transmission Exception Check-Ins for the exception no longer needed. Failure to submit a required Monthly Transmission Exception Check-In or rejection of the Monthly Transmission Exception Check-In in part or in whole (e.g. if contrary information is available to the Program Administrator, indicating transmission has become available for the month in question) will result in an assessment of a Deficiency Charge unless the deficiency is cured within seven days of notice of non-compliance.

3.1.4.1.1. Enduring Constraints

The Enduring Constraints Monthly Transmission Exception may be granted if the Participant is unable to demonstrate the necessary and sufficient firm transmission rights on any single segment of a source-to-sink path for a resource (exceptions will not be granted for two segments of a source-to-sink path) and the Participant demonstrates:

- there was no sufficiently firm ATC posted by a transmission service provider at the FS Deadline on the applicable segment for the months required; and
- there was remaining available ATC (non-firm ATC after the fact) for all CCHs in the same season of the most recent year for which CCHs have been calculated; or
- if the path was constrained in at least one CCH in the most recent same season from the most recently available CCH data set, that the Participant is:
    - constructing or contracting for a new local resource for at least the amount of Monthly Transmission Exception requested; or
    - pursuing long-term firm rights by entering the long-term queue and taking all appropriate steps for at least the amount of Monthly Transmission Exception requested.

If the required transmission rights for the applicable segment are only available for a duration of more than one year at the FS Deadline, a Participant is not required to

obtain that service to qualify for the Enduring Constraints exception. However, in that circumstance, the Participant shall not qualify for an Enduring Constraint exception for the same path (or across the same constraint) for the same month of the same season of the subsequent year if the Participant again declines the transmission rights that are available for a duration of more than one year.

In addition to the Monthly Transmission general exception discussed above in Section 3.1.4.1, a Participant requesting an Enduring Constraint Monthly Transmission Exception will need to include the Senior Official Attestation found in Appendix D – Enduring Constraint Additional Attestation as part of its FS Submittal.

3.1.4.1.2. Future Firm ATC Expected

The Future Firm ATC Expected exception may be granted when there is a reasonable expectation that sufficiently firm ATC will be made available following the FS Deadline and all the following criteria are met:

1. NERC priority 6 (NITS from resources not designated as network resources or conditional firm long-term firm PTP) or NERC priority 7 firm PTP transmission service or NITS is not posted or available prior to the FS Deadline; and
2. The Participant provides evidence that its transmission service provider has released additional NERC Priority NERC Priority 6 or 7 Firm PTP or NITS on the applicable path for all CCHs in the same season of the most recent year for which CCHs have been calculated following the FS Deadline; and
3. The Participant demonstrates that the amount of FS Transmission Requirement being requested for the Future Firm ATC Expected exception is equal to or less than the minimum volume of Priority NERC Priority 6 or 7 Firm PTP or NITS rights ATC released in the previous year's CCHs for the appropriate Binding Season.

If the required ATC on the applicable segment for the Month(s) needed is only posted or available prior to the FS Deadline for a duration of more than one year, a Participant is not required to obtain that service to qualify for the Future Firm ATC Expected exception. However, in that circumstance, the Participant shall not qualify for a Future Firm ATC Expected exception for the same path (or across the same constraint) for the same month of the same season of the subsequent year if the Participant again declines the ATC for transmission service rights that are available for a duration of more than one year.

The total amounts of Future Firm ATC Expected exceptions on specific paths is limited to the amount of transmission demonstrated to likely become available. If multiple Participants have requested a Future Firm ATC Expected exception on the same path,

the available volume will be granted on a pro-rata basis to requesting Participants based on the size of their requests.

3.1.4.1.3. Transmission Outages and Derates

The Transmission Outages and Derates exception may be granted when a Participant that has not met its FS Transmission Requirement demonstrates that all of the following criteria are met:

1. That an applicable segment of its existing transmission service rights from its source to sink path for its Qualifying Resource is expected to be derated or out-of-service and that additional ATC at NERC Priority 7 or 6 Firm PTP or NITS is not otherwise available; and
2. The duration of the Transmission Outages and Derates exception request coincides with the months of the outage or derate; and
3. The volume of the Transmission Outages and Derates exception being requested is either:
    a. equal to or less than the reduction in the Participant's existing transmission service rights on that path for the applicable derate or outage period; or
    b. equal to or less than the NERC Priority 7 or 6 Firm PTP or NITS for the applicable derate or outage period that would otherwise be posted and available for reservation were it not for the transmission limitation.

If multiple Participants have requested a Transmission Outages and Derates exception on the same path, the available volume (per Section 3.1.4.1.3 (3) above) will be granted on a pro-rata basis to requesting Participants based on the size of their requests.

3.1.4.1.4. Counterflow of a Qualifying Resource

A Counterflow of a Qualifying Resource exception may be granted if a Participant demonstrates that either:

1. The Participant's use of firm transmission service in connection with the delivery of capacity from Participant's Qualifying Resource (or from the resource associated with its Net Contract QCC) to Participant's load (or other qualifying delivery point permitted by the WRAP); or
2. A second Participant's use of firm transmission service in connection with the delivery of capacity from the second Participant's Qualifying Resource (or from the Qualifying Resource associated with its Net Contract QCC) to the second Participant's load (or other qualifying delivery point permitted by the WRAP) provides a direct and proportional counterflow transmission that supports the first Participant's delivery of capacity from the first Participant's Qualifying

Resource (or from the Qualifying Resource associated with its Net Contract QCC) to the first Participant's load (or other qualifying delivery point permitted by the WRAP) Qualifying Resource to its load.

If the Counterflow of a Qualifying Resource exception is requested under subpart (2) of this Section, the Participant requesting the exception shall include a written acknowledgement from the second Participant that it is aware of such exception request. Counterflow of a Qualifying Resource must be directly between two BAAs. Counterflows that involve three or more BAAs will not qualify for the Counterflow of a Qualifying Resource exception.

3.1.5. Planned Outages

Per the requirements of Tariff Section 16.2.8, any planned outages during a Binding Season must be taken from a Participant's surplus (above its FS Capacity Requirement).

3.1.5.1. Planned Outages underway at the time of FS Submittal

Any Qualifying Resource that is out of service at the time of the FS Deadline and is planned to remain out of service for the first five or more days of a month in the Binding Season cannot have such Qualifying Resource's QCC counted toward meeting the Participant's FS Capacity Requirement for that month.

To ensure QCC from resources is not utilized to meet a monthly FS Capacity Requirement during the planned outage, the Capacity associated with such resources shall be deducted by identifying the planned outages in the FS Demonstration.

3.1.5.2. Planned Outages not underway at the time of the FS Submittal

Participants have the discretion to take planned outages at any time during the Binding Season but are required to take planned outages out of their surplus FS Demonstration capacity or to procure additional supply to replace such capacity on outage. This requirement ensures the participant's FS Capacity Requirement is available during the Operation Program timeframe.

Participants may provide information on Qualifying Resources that are planned to be out of service during the Binding Season as part of their FS Submittal to ensure QCC from those resources is not utilized to meet a monthly FS Capacity Requirement during the planned outage. Capacity associated with such resources shall be deducted from the FS Demonstration for such month(s).

Each Participant shall provide a Senior Official Attestation (found in Appendix E – Planned Outages Attestation) by the FS Deadline that:

- The sum of expected planned outages at any one time during the Binding Season will be equal to or less than the surplus stated in its FS Demonstration at the time of such planned outage, or

- The Participant is expected to procure the necessary capacity or energy to meet the Operations Program requirements regardless of planned outage schedules.

A planned outage shall not justify a waiver of, or exception to, a Participant's Holdback Requirement or Energy Deployment obligations.

3.2. Forward Showing Supporting Materials

In addition to the FS Demonstration (see Section 3.1), accompanying Monthly Transmission Exception Requests (see Appendix C – Monthly Transmission Exception General Attestation) and required Senior Official Attestations, a Participant's FS Submittal shall also include supporting information on Qualifying Resource testing, Thermal Resources without GADS data, Hydro Resource QCCs, late registered resources, and transition exceptions.

3.2.1. Testing

As described in *BPM 105 Qualifying Resources,* Participants shall perform annual Operational Tests on all Qualifying Resources. In addition, Capability Tests shall be required for Thermal Resources, Llong ~~d~~Duration Sstorage resources, and Demand Response Resources. Each Participant's FS Submittal must include a completed resource testing report, employing for such purpose the resource testing form that is made available on the WPP website.

3.2.2. Thermal Resources that are not Required to Report GADS Data

BPM 101 Advance Assessment describes the data request sent out by the Program Operator to gather the information required to calculate QCC values for Qualifying Resources. The Advance Assessment data request includes NERC GADS or equivalent outage data that can be used to calculate the outage rates and factors for existing Thermal Resources. However, as discussed in *BPM 105 Qualifying Resources*, certain Thermal Resources are not required to report GADS data. For all Qualifying Resources not providing GADS reporting data, the Participant will be required to provide a Senior Official Attestation (provided in Appendix F – Non-GADS QCC Calculation Attestation) as part of its FS Submittal that attests the resource is not subject to GADS reporting and the FS Demonstration submitted by the Participant is an accurate depiction of either the historical performance or historical outage data of the resource.

3.2.3. Hydro Resources

As discussed in *BPM 105 Qualifying Resources*, QCCs for Storage Hydro resources are calculated by the Participant owners. The result of those calculations shall be submitted as part of a Participant's FS Submittal in the format described in *BPM 105 Qualifying Resources* and the FS Instruction Manual. The Storage Hydro QCC Methodology utilizes an equivalent demand forced outage rate (EFORd) value as an input. Participants shall supply as part of their FS Submittal a NERC GADS report showing the EFORd value. For all Storage Hydro resources that do not report NERC GADS data, the Participant shall similarly calculate an EFORd value from historical performance data and the non-GADS outage calculation tool as posted on the WPP website. The Participant will provide the output of this tool and a Senior Official Attestation (provided in Appendix F – Non-GADS QCC Calculation Attestation) attesting that the resource is not subject to GADS reporting and that the Participant has utilized the non-GADS outage calculation tool with complete and correct information. Participants will also provide a Senior Official Attestation (in the form provided in *Appendix I*) that their calculation of the Storage Hydro QCC value is correct, accurate, and in compliance with the requirements of the Tariff.

3.2.4. Late Registered Resources

As discussed in *BPM 105 Qualifying Resources*, resources that are unable to register by the deadline of the Advance Assessment data request (see *BPM 101 Advance Assessment*) may still be able to register prior to the FS Deadline so long as the necessary information is provided.

3.2.5. Transition Exceptions

BPM 109 Forward Showing Transition Period discusses how a new Participant application to the Program Administrator prior to March 31, 2027, shall be required to select an initial Binding Season during the Transition Period (Summer seasons for 2025, 2026, and 2027, and the Winter seasons for 2025-2026, 2026-2027, and 2027-2028). During its Transition Binding Seasons, a Participant may be able to request potential reductions in Deficiency Charges as described below.

3.2.5.1. Excused Transition Deficits

During a Participant's Transition Binding Seasons, Deficiency Charges otherwise applicable to the Participant under Section 17.1 of the Tariff, and calculated under Section 17.2, shall be reduced to the extent the Participant has an Excused Transition Deficit (ETD). To obtain an ETD for a Binding Season, the Participant must provide a Senior Official Attestation, as included in *BPM 109 Forward Showing Transition Period*.

3.2.5.2. Legacy Contract – No Joint Contract Accreditation Form (JCAF) Option

In addition to an ETD, during the Transition Period a Participant may be able to reduce its Monthly Capacity Deficiency to the extent the deficiency is due to the Participant's failure to obtain assent to a JCAF from the supplier under a Legacy Agreement (a power supply agreement entered into prior to October 1, 2021), as explained in *BPM 109 Forward Showing Transition Period* (the No-JCAF Option). To obtain that relief, the Participant must provide a Senior Official Attestation (in the form set forth in *BPM 109 Forward Showing Transition Period*) as part of its FS Submittal attesting that the Participant made commercially reasonable efforts to execute the required JCAF with the supplier under the Legacy Agreement, but the supplier was unable or unwilling to counter sign the JCAF.

4. Cure Period

The Program Operator and Program Administrator shall review Participants' FS Submittals and the Program Administrator shall serve deficiency notices in writing to any Participant that has not, by the FS Deadline shown in Table 1, submitted all required FS Submittal information and materials (see Section 3), or that has submitted information or materials that the Program Operator has found is or may be incorrect or deficient. Participants served a deficiency notice will have until the dates shown in Table 1 to cure their deficiencies. Deficiencies uncured by the time of the FS Cure Deadline shall be subject to the FS Deficiency Charge (*see BPM 107 Forward Showing Deficiency Charge*).

Appendix A – FS Demonstration Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that I have reviewed [Participant]'s FS Submittal provided this day by [Participant] to Western Power Pool, and that to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed herein, and that the statements therein are true, correct and complete per all of the requirements of Business Practice Manual 108.

Appendix B – Catastrophic Resource Failure Exception Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that, as set forth in the accompanying request for an exception from the FS Capacity Requirement for the [specify season] Binding Season, (i) [Participant] has experienced a catastrophic failure of its [identify] Qualifying Resource[s] due to an event of Force Majeure as defined by Section 8.1 of the WRAP Tariff; (ii) [Participant] is unable to replace the QCC quantity of such Qualifying Resource[s] on commercially reasonable terms prior to the FS Deadline of [specify date] as a result of the timing and magnitude of such catastrophic failure and its consequences; and (iii) the statements in the accompanying FS Capacity Requirement exception request, including the information provided therein on the nature, causes and consequences of the catastrophic failure[s], and [Participant]'s specific, concrete efforts prior to the referenced FS Deadline to secure replacement Qualifying Resources for the [specify season] Binding Season, are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed therein.

Appendix C – Monthly Transmission Exception General Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that, as set forth in the accompanying request for an exception from the FS Transmission Requirement for the [specify season] Binding Season, (i) [Participant] meets the stated WRAP requirements for the exception; and (ii) the statements in the accompanying FS Transmission Requirement exception request are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed therein.

Appendix D – Enduring Constraint Additional Attestation

I further attest, in support of [Participant]'s request for the Enduring Constraints Transmission Exception, that (i) no ATC for transmission service rights for which the exception is requested is available (either from the transmission service provider or through a secondary market) as of the FS Deadline, on the applicable segment for the Month(s) needed (for a duration of one year or less) at the applicable Open Access Transmission Tariff rate or less; (ii) [Participant] has taken commercially reasonable efforts to procure firm transmission service rights, and (iii) [Participant] has posted a request for the necessary firm transmission rights on the relevant bulletin board, (i.e., OASIS) prior to the FS Deadline.

Appendix E – Planned Outages Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that: (i) as set forth in [Participant]'s FS Submittal provided this day by [Participant] to Western Power Pool, Participant has included information on all Qualifying Resources that are currently out of service with a scheduled return date that falls during the [specify season] Binding Season; (ii) Participant [has] [does not have] certain additional outages at Qualifying Resources that are planned to occur during the [specify season] Binding Season but have not yet begun at the time of submission of the FS Submittal; (iii) Participant has made reasonable efforts to obtain and provide information on any such additional outages, but such data cannot be supplied with reasonable specificity; (iv) the aggregate of any such additional outages is either expected to be equal to or less than [Participant]'s remaining surplus as defined by [Participant]'s Portfolio QCC in excess of [Participant]'s FS Capacity requirement or to the extent it is not excess it will be replaced with the necessary capacity or energy to meet the Operations Program requirements, consistent with Section 16.2.8.2 and Part III of the Tariff; and (v) that the foregoing statements are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed herein.

Appendix F – Non-GADS QCC Calculation Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that the resource that is the subject of this form is not subject to GADS data reporting; and that the resource's performance data (historical output or historical outage evaluation) for the Capacity Critical Hours of the [specify season] Binding Season is accurately accounted for in the accompanying FS Submittal.

Appendix G – FS Summary

A Participant's total Portfolio QCC is defined as the Participant's Resource QCC plus its Net Contract QCC plus its total RA transfer minus its planned outages for each month of the Binding Season.

$$Portfolio\ QCC = Resource\ QCC + Net\ Contract\ QCC + Total\ RA\ Transfer - Planned\ Outages$$

Where:

Resource QCC is the summation of all QCC values for the Participant's Qualified Resources calculated for each month of a Binding Season.

$$Resource\ QCC = \sum QCC\ of\ all\ Participant\ Qualifying\ Resources$$

The Net Contracted QCC is a monthly value equal to the sum of the Participant's Contract QCCs. Import contracts (purchases) are additive to the Participant's QCC value and exports (sales) are a negative QCC value. The Net Contract QCC formula is as follows:

$$Net\ Contract\ QCC = \sum QCC\ of\ all\ Participant\ Qualified\ Contracts$$

Resource adequacy transfers are added to the purchasing Participant's Portfolio QCC value and subtracted from the selling Participant's Portfolio QCC value. The contracts for these transfers will be provided to the Program Operator for validation.

$$Total\ RA\ Transfer = \sum Participant\ RA\ Transfer\ Contracts$$

The Participant's Total Portfolio QCC should be at least equal to the Participant's FS Capacity Requirement for each month of the Binding Season. If the Participant's Total Portfolio QCC meets or exceeds that threshold, then the Participant's FS Capacity Requirement has been satisfied.

$$Total\ Portfolio\ QCC \geq FS\ Capacity\ Requirement$$

Where:

The Participant's FS Capacity Requirement is its forecasted monthly demand multiplied by 100% plus the applicable Monthly FSPRM according to the following equation:

$$FS\ Capacity\ Requirement = Monthly\ P50 * (100\% + Monthly\ FSPRM)$$

The over and underperformance of VERs, forced outages, and Run-of-River hydro in the Participant's portfolio will be used to calculate performance changes in the Operations Program. The Participant's additional planned maintenance or short-term sales will be made from its excess Portfolio QCC.

The Participant's total demonstrated FS Transmission shall be at least equal to 75% of the Participant's FS Capacity Requirement at the FS Deadline. If the Participant's Total Portfolio QCC meets or exceeds that threshold, then the Participant's FS Transmission Requirement has been satisfied.

$$Demonstrated\ FS\ Transmission \geq FS\ Capacity\ Requirement * 75\%$$

Where:

Demonstrated FS Transmission is equal to the sum of all transmission demonstrated with completed paths and Approved Transmission Exceptions.

$$Demonstrated\ FS\ Transmission = \sum Trasnmission\ Demonstrated\ (completed\ paths) \mp Approved\ Transmission\ Exceptions$$

Appendix H – Demand Response Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that for each Demand Response Qualifying Resource included in the accompanying FS Submittal, [Participant,] upon due investigation, has determined whether the demand response capability of such resource has been previously deployed to reduce load, and if such capability has been deployed to reduce load, Participant has, for purposes of developing the P50 Peak Load Forecast employed in such FS Submittal, added back to each historic hour when such capability was deployed the MWs of load reduction provided by such capability in such hour.

Appendix I – Storage Hydro Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that I have reviewed [Participant]'s Storage Hydro Qualifying Capacity Contribution (QCC) provided this day by [Participant] to Western Power Pool (i.e., Program Administrator) ; and, to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed therein, that such QCC has been calculated in accordance with the methodology set forth in *BPM 105 Qualifying Resources* and such calculation meets all requirements of Tariff Section 16.2.5.5; that [Participant] has provided the Program Administrator with all information necessary to review such QCC that is stated in Tariff, Section 16.2.5.5, to the extent requested by the Program Administrator, and that all statements and information included in the FS Submittal with respect to the calculation of such QCC are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed therein.

Appendix J – Transmission Rights Attestation

I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest that [Participant] has the transmission rights from [insert Qualifying Resources] Qualifying Resources to the load on [Participant's] system, but [Participant] is unable to provide transmission service reservation information.

WESTERN POWERPOOL

Western Resource Adequacy Program

109 Forward Showing Transition Period

100 – Forward Showing

Revision History

Manual Number	Version	Description	Revised By	Date
109	0.1	RAPC Glance Version	Rebecca Sexton	8/22/2023
109	0.2	Public Comment	Rebecca Sexton	8/28/2023
109	0.3	RAPC & PRC Discussion	Rebecca Sexton	10/6/2023
109	0.4	RAPC Endorsement	Rebecca Sexton	10/20/2023
109	0.5	Board Consideration	Rebecca Sexton	10/21/2023
109	1.0	Board Approved	Rebecca Sexton	12/6/2023
109	1.1	2024-NTFP-2 Edits	Katie Gregor	1/27/25
109	2.0	Annual BPM Review	Danie Williams	12/23/2025

109 Transition Period

1. Introduction

The Forward Showing (FS) Program of the Western Resource Adequacy Program (WRAP) provides for a four-year Transition Period, commencing in Summer 2025 Binding Season and ending after Winter 2028-2029 Binding Season. All Participants will participate in the Summer 2025 and Winter 2026-2027 Binding Seasons and all Binding Seasons in between as Non-Binding Participants. From Winter 2027-2028 all Participants will be Binding (excepting any Critical Mass provisions) and subject to certain charges for failure to meet or cure compliance obligations associated with Binding participation in the WRAP; however, during the Transition Period such charges may be reduced in certain limited circumstances. The Transition Period also provides Participants the option of Binding participation one season earlier in Summer 2027, so this season may have a mixture of Binding and Non-Binding Participants. This FS Transition Period Business Practice Manual (BPM) provides implementing details and practices relevant to the FS Program during the Transition Period. Implementing details and practices relevant to the Operations Program during the Transition Period are described separately in *BPM 210 Binding and Non-Binding Participation in Operations Program*.

1.1. Intended Audience

BPM 109 is intended for WRAP Participants and other interested individuals or entities and will be particularly useful for those responsible for their Participant organization's submission of FS Submittal and ensuring that their organization complies with WRAP FS Program requirements, whether Non-Binding or Binding, during the Transition Period.

1.2. What Will You Find in This Manual?

BPM 109 includes sections outlining practices and implementation details relevant to the Transition Period, Binding and Non-Binding participation, Excused Transition Deficits (ETDs), and the reduction in Monthly Capacity Deficiency Charges available under certain conditions for Legacy Agreements.

1.3. Purpose

To provide an overview of the WRAP Transition Period activities for the FS Program that might impact business processes of current or potential Participants.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 109 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 109 are defined here.~~

Joint Contract Accreditation Form, or JCAF: As defined in *BPM 106 Qualifying Contracts.*

No-JCAF Option: Transition provision allowing a Participant to utilize Legacy Agreements without demonstration of a JCAF on a limited basis, as described in Section 6.

Transition Binding Season: For all Participants the Binding Seasons during the Transition Period from Winter 2027-2028 onwards for which the Participant is subject to the mandatory requirements of Parts II and III of the Tariff, and including Summer 2027 for Participants that opted for Binding participation one season earlier.

2. Background

The WRAP is a regional resource adequacy program in which Participants demonstrate, in advance of a defined season when resources may need to be deployed, that they have sufficient resources to meet their expected peak loads and FS Planning Reserve Margins (FSPRMs). The WRAP imposes standards and requirements related to such matters as the resources that qualify to meet resource adequacy objectives, the calculation of peak loads, and the required minimum FSPRMs. The WRAP provides for imposition of significant charges on Participants that do not show in advance sufficient resources to meet their loads. In addition, under the WRAP, Participants with surplus resources are subject to requirements in certain circumstances during the subject season to assist Participants that are resource deficient, and if a surplus Participant fails to make required energy deliveries to a deficient Participant, the surplus Participant is subject to significant charges for such delivery failure. Recognizing that not all Participants may have made all necessary arrangements and implemented all necessary business processes at the program's outset to secure WRAP-Qualifying Resources, meet the various WRAP obligations, and avoid imposition of these significant charges, the WRAP includes a four-year Transition Period. The Transition Period rules provide the possibility of reduced charges in certain specific circumstances designed to recognize that some Participants may still be in the process of securing all resources needed to ensure compliance with WRAP requirements. All Participants will be subject to Binding participation obligations starting November 1, 2027 (for the Winter 2027-2028 Binding Season), but the Transition Period rules allow each Participant the option to elect to also participate one season earlier as a Binding Participant in Summer 2027.

3. Transition from Non-Binding to Binding Seasons

The Transition Period consists of the Summer Seasons for 2025, 2026, 2027, and 2028, and the Winter Seasons for 2025-2026, 2026-2027, 2027-2028, and 2028-2029. The Winter 2027-2028 Binding Season beginning November 1, 2027, will be the first Binding

Season for all Participants whose Western Resource Adequacy Program Agreement (WRAPA) is effective on September 15, 2026, unless a Participant selects Summer 2027 as its first Binding Season. Transition Period provisions will continue to apply until March 15, 2029, as noted in Table 1 below.

Table 1. Transition Period Provisions and Non-Binding/Binding Participation

Period	Participation and Provisions	
Summer 2025 through **Winter 2026-2027**	Non-Binding participation only	Transition Period provisions apply
Summer 2027	Both Binding and Non-Binding participation	
Winter 2027-2028 through **Winter 2028-2029**	Binding participation only	
Summer 2029 onwards	Binding participation only Subject to all standard WRAP requirements and obligations	

3.1. Option of Summer 2027 as First Binding Season

A Participant that executes a WRAPA on or before January 15, 2026, may notify WPP on or before January 15, 2026, of its intent to participate in the Summer 2027 Binding Season as a Binding Participant. A Participant that executes a WRAPA after January 15, 2026 and on or before September 15, 2026 may elect to participate in the Summer 2027 Binding Season as a Binding Participant by notifying WPP of such intent on or before the effective date of its WRAPA. Notification of intent to participate in Summer 2027 as a Binding Participant must be provided in email to WPP. The decision to participate as a Binding Participant in the Summer 2027 Binding Season is optional, thus Summer 2027 participation may be mixed, with some Participants participating in a Non-Binding manner, while others participate in a Binding manner.

4. Transition Period Binding Season Participation

During Transition Period Binding Seasons, a Participant will be subject to the same obligations and requirements, and have the same rights, that the WRAP Tariff establishes for the period beginning after the end of the Transition Period, except for the WRAP Tariff provisions, as also elaborated below concerning ETDs and lack of JCAF assent for Legacy Agreements.

4.1. Non-Binding Season Participation

During Non-Binding Seasons, a Participant will not be subject to Deficiency Charges under the FS Program, or to mandatory Holdback Requirements as a result of a positive Sharing Calculation result, mandatory Energy Deployments, or Delivery Failure Charges under the Operations Program. Participants will be subject to all other FS Program requirements, including the requirement to timely provide data in connection with the Advance Assessment, the requirement to timely provide FS Submittals, and Operations Program requirements as appropriate and detailed in *BPM 210 Binding and Non-Binding Participation in Operations Program*. A Participant in a Non-Binding Season may participate in the Operations Program as outlined in *BPM 210 Binding and Non-Binding Participation in Operations Program*.

4.2. Option to Defer First Binding Season for All Participants

Within two years prior to the start of Participants' first Binding Season (Summer 2027 if any Participants opted for Binding participation one season early or Winter 2027-2028 if no Participants avail themselves of that option), a Binding Participant in that first Binding Season may request a vote of all Binding Participants in that first Binding Season to delay implementation of the first Binding Season for up to two seasons. The deferral vote may only occur for the first Binding Season of the WRAP.

Delayed implementation of the first Binding Season will only be approved if 75% of the Participants who in the first Binding Season vote in favor of the delay. Approval requires a vote of 75% of both the House and Senate vote tallies (as described in Sections 4.1.6.2.1 and 4.1.6.2.2 of the WRAP Tariff) of all Binding Participants in the first Binding Season.

This deferral option encompasses an option for the relevant Participants to vote to delay implementation only of the Operations Program portion of the first Binding Season and retain the binding FS Program portion of the first Binding Season.

If the Participants who in the first Binding Season of the WRAP vote to delay implementation of the first Binding Season, all compliance charges for the FS Program and Operations Program are automatically waived; provided that, if the Participants vote to delay implementation only of the Operations Program portion of the first Binding Season and retain the binding FS Program portion of the first Binding Season, only the effectiveness of Operations Program compliance charges is deferred.

5. Excused Transition Deficits

During a Participant's Transition Binding Seasons, FS Deficiency Charges otherwise applicable to the Participant under Section 17.1 of the WRAP Tariff, and calculated under Section 17.2, shall be reduced to a Discounted Deficiency Charge to the extent

the Participant has an ETD. ETDs are not resource specific and relate to a MW quantity of the Participant's FS Capacity Requirement.

5.1. How to Obtain an ETD

To obtain an ETD during a Binding Season, the Participant must provide a Senior Official Attestation (in the form set forth in Appendix A below) attesting that the Participant or a relevant third party servicing load for which the Participant is the LRE has made commercially reasonable efforts to secure Qualifying Resources in the quantity needed to satisfy the Participant's FS Capacity Requirement for the Binding Season, but is unable to obtain Qualifying Resources in the quantity required for the Binding Season because the supply of such resources on a timely basis and on commercially reasonable terms is at that time inadequate. If the attestation relates to a third-party servicing load for which the Participant is the LRE, the Senior Official Attestation may be signed by a Senior Official of the third-party load service provider. If an ETD is requested the required attestation shall be included as part of the Participant's relevant FS Submittal (*see BPM 108 Forward Showing Submittal).* Participants may apply for ETDs in multiple Months of a Binding Season.

5.2. Limits on Megawatts to Which ETDs can be Applied

For each Month of a Binding Season during the Transition Period, ETDs are limited to a maximum permissible MW quantity per Participant per Month.

The MW limit is equal to the FSPRM applicable to a Participant for its FS Submittals for each Month in the Binding Season, multiplied by a percentage value. This percentage value decreases for each year that Transition Period provisions apply.

The percentage value is 200% for each Month of the 2027 Summer Season and 2027-2028 Winter Season, and 100% for each Month of the 2028 Summer Season and 2028-2029 Winter Season.

Table 2. Percentage Value to be Multiplied by FSPRM

Season	Percentage Value to be Multiplied by Participant FSPRM
Summer 2027	200%
Winter 2027-2028	200%
Summer 2028	100%
Winter 2028-2029	100%

For example, if the applicable FSPRM is 20% and a Participant's P50 Peak Load for June 2028 is 1000 MW, the Participant could seek an ETD for 200 MW (i.e., 20% * 1000 MW * 100% = 200 MW).

As can be seen, the MW limitation of a Participant's aggregate ETDs for each Month of a Binding Season is calculated from only the increment of the Participant's FS Capacity Requirement defined by the FSPRM, i.e., by a percentage of the Participant's P50 Peak Load. It is not defined by the sum of the Participant's P50 Peak Load plus the MW needed for the FSPRM. The reduction in the percentage factor every 12 Months, as shown in Table 2~~Table 2~~ reflects the program's expectation that Participants will use the four-year Transition Period provisions to address any gaps in their portfolio of Qualifying Resources needed to meet their FS Capacity Requirement.

5.3. Discounted Deficiency Charge once ETD is Applied

A Participant can apply ETDs to its Monthly Capacity Deficiency to reduce its Deficiency Charge. For the MW portion of its Monthly Capacity Deficiency for which it obtained ETDs, a Participant will pay a Discounted Deficiency Charge reduced by a percentage value. That percentage value will be equal to 75% for each of the 2027 Summer Season and 2027-2028 Winter Season, and 50% for each of the 2028 Summer Season and 2028-2029 Winter Season.

Table 3. Reduction of Deficiency Charge Based on ETDs

Season	Percentage Value Reduction for Portion of Monthly Capacity Deficiency to Which ETDs Have Been Applied
Summer 2027	75%
Winter 2027-2028	75%
Summer 2028	50%
Winter 2028-2029	50%

For the MW portion of its Monthly Capacity Deficiency for which it did not obtain ETDs, the Participant will be assessed a FS Deficiency Charge calculated under WRAP Tariff Section 17.2, without reduction or adjustment.

A detailed example is provided in the FS Transition Period Deficiency Charge Examples document posted on the WPP website.

As can be seen in Table 3~~Table 3~~, the percentage reduction in a Participant's Deficiency Charge becomes smaller every 12 Months, and thus its Discounted Deficiency Charge after providing an accommodation for ETDs becomes larger every 12 Months. This

again reflects an expectation that Participants will use the four-year Transition Period provisions to address any gaps in their portfolio of Qualifying Resources needed to meet their FS Capacity Requirement.

6. Reduction of Monthly Capacity Deficiency Applicable to Legacy Agreements

In addition to the possible reduction in a Participant's Capacity Deficiency Charges for an ETD, a Participant may be able during the Transition Period to reduce its Monthly Capacity Deficiency to the extent the deficiency is due to the Participant's failure to obtain assent from the supplier under a Legacy Agreement to a JCAF. WRAP's general rule is that supply contracts must be resource specific. Legacy Agreements (including, for example agreements without an identified or inferred source entered under Schedule C of the Western Systems Power Pool), entered before prospective Participants in WRAP reached a consensus on the resource specific rule (October 1, 2021), are allowed an exception to that rule, but only if the Participant relying on a Legacy Agreement in its FS Submittal obtains the written assent of the supplier under the Legacy Agreement to a form which enables the Program Operator to presume a source or sources for the agreement. The Transition Period rules permit a limited further exception to that requirement (thus allowing Participants some additional time to convert or replace pre-existing Schedule C-type agreements). To obtain that relief, the Participant must provide, as part of their FS Submittal (see *BPM 108 Forward Showing Submittal*), a Senior Official Attestation (in the form set forth in Appendix B below) attesting that the Participant made commercially reasonable efforts to execute the required JCAF with the supplier under the Legacy Agreement, but the supplier was unable or unwilling to counter sign the JCAF. This transition provision is termed the No-JCAF Option.

Even with that showing, this Transition Period exception is strictly limited. A Participant using this exception, whether for one or multiple Legacy Agreements, may not reduce its Monthly Capacity Deficiency in the subject Month by a MW quantity greater than 25% times the FSPRM applicable for that Participant for the relevant Binding Season.

For example, assuming an FSPRM value of 20% for a given Month during the Transition Period, a Participant with a 1000MW P50 Peak Load in such Month may seek this exception for as much as 50 MW (20% * 1000MW * 25% = 50MW).

In addition, a Participant employing the No-JCAF Option must reduce, MW for MW, its maximum permitted use of ETDs for the same Transition Binding Season. For example, if a Participant exercises the No-JCAF Option exception for a MW quantity equal to 20% of the Participant's FSPRM for the Summer 2028 Binding Season (which has a maximum ETD amount of 50% of the FSPRM), then the Participant may apply ETDs in an

aggregate MW quantity no greater than 30% of their FSPRM for Summer 2028 (50% - 20% = 30%).

7. Adjustment of Revenue Allocations

Any Participant that exercises the No-JCAF Option or successfully applies an ETD shall not receive an allocation of revenues from the payment of Deficiency Charges as to such Binding Season.

Revenues from ETDs will be distributed to Participants, for which the Season is a Binding Transition Season, and that did not use ETDs and did not exercise the No-JCAF Option to meet their FS Capacity Requirement. A Participant that receives revenues from ETDs will not have an increase in its FS Capacity Requirement solely as a result of receipt of such revenue.

Appendix A – Senior Official Attestation – ETD

The following Senior Official Attestation will be required for any Participant seeking an ETD:

> I, the undersigned, who, as [title], serves as a senior official of [Participant/third-party load service provider], hereby attest that (i) [Participant] meets the stated WRAP requirements for an Excused Transition Deficit; (ii) [Participant] has made commercially reasonable efforts to secure Qualifying Resources in the quantity needed to satisfy [Participant]'s FS Capacity Requirement for the [identify season] Binding Season, but is unable to obtain Qualifying Resources in the quantity required for the Binding Season because the supply of such resources on a timely basis and on commercially reasonable terms is at the present time inadequate; and (iii) the foregoing statements are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed herein.

Appendix B – Senior Official Attestation – No-JCAF Option

The following Senior Official Attestation will be required for any Participant seeking to utilize the No-JCAF Option with a Legacy Contract:

> I, the undersigned, who, as [title], serves as a senior official of [Participant], hereby attest, in support of [Participant]'s request for a reduction in the Monthly Capacity Deficiency otherwise calculated under the Tariff, because ___ MW of such deficiency is due to [Participant]'s inability to obtain assent from the supplier under a Legacy Agreement to the accreditation required for such Legacy Agreement under the Tariff and Business Practice Manuals; (ii) [Participant] made commercially reasonable efforts to execute the required accreditation form with the supplier under the Legacy Agreement, but the supplier was unable or unwilling to counter sign the accreditation form; and (iii) the foregoing statements are true, correct and complete to the best of my knowledge and belief following due inquiry appropriate to the reliability and resource adequacy matters addressed herein.

WESTERN POWERPOOL

Western Resource Adequacy Program

201 Operations Program Timeline

200 - Operations

Revision History

Manual Number	Version	Description	Revised By	Date
201	0.1	RAPC Glance Version	Ryan Roy	3/15/2023
201	0.2	Public Comment Version	Ryan Roy	3/30/2023
201	0.3	RAPC & PRC Discussion	Ryan Roy	6/13/2023
201	0.4	RAPC Endorsement	Ryan Roy	7/27/2023
201	0.5	Board Consideration	Ryan Roy	8/16/2023
201	1.0	Board Approved	Ryan Roy	8/23/2023
201	2.0	Annual BPM Review	Michael O'Brien	12/23/25

Table of Contents

201 Operations Program Timeline

1. Introduction

The Operations Program Timeline Business Practice Manual (BPM 201) outlines the high-level activities and associating timing of those activities that occur for the period starting from seven Days prior to the Operating Day and ending on the Operating Day for each Operating Day of the Binding Season. Further details on each activity, such as data submission requirements, interactions with the Program Interface Tool, details of the Sharing Calculation, and details of the calculation of Holdback Requirement, are addressed in *BPMs 202 Participant Sharing Calculation Inputs, 203 Program Sharing Calculation Inputs, 204 Holdback Requirement,* and *205 Energy Deployment* ~~other Business Practice Manuals~~.

1.1. Intended Audience

~~This~~ BPM 201 is intended for Western Resource Adequacy Program (WRAP) Participants and other interested individuals or entities. ~~This~~ BPM 201 is particularly useful for those individuals that are responsible for, and support, participation in the Operations Program on a Day-to-Day basis. This might include trading and scheduling staff, front-office technology and systems support staff, or others responsible for managing the short-term load resource balance.

1.2. What You Will Find in This Manual

This document includes three sections, which cover i) the period leading up to the Preschedule Day, ii) the Preschedule Day itself, and iii) the Operating Day.

1.3. Purpose

The purpose of BPM 201 is to provide an overview of the WRAP Operations Programs activities that may impact business processes or front-office activities of current or potential Participants. The activities and associated timings expand on the information provided in the Tariff.

1.4. Definitions

All capitalized terms that are not otherwise defined in ~~this BPM~~BPM 201 or another BPM have the meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff that are specific to this BPM are defined here:~~

Program Interface Tool (PIT): The end-user, web-based technology solution that Participants will utilize to interact with the Operations Program. This may also be referred to as the WRAP Operations (Ops) Client.

2. Multi-Day-Ahead Assessment

The Operations Program includes a Multi-Day-Ahead Assessment which will look ahead the next seven Operating Days. By 05:20 Pacific Prevailing Time (PPT) on each Western Electric Coordinating Council (WECC) scheduling Day each Participant will submit to the Program Operator ~~(PO) an hourly forecast of i) expected load, ii) output of VERs, iii) output of ROR, iv) expected Contingency Reserve requirement and v) total Forced Outages including outages on transmission facilities associated with imports utilized by the Participant to meet its Forward Showing Capacity Requirement. the~~These inputs that are further described in *BPM 202 Participant Sharing Calculation Inputs*. ~~The data submittal should follow the format specified in the Input Date File Specification document which will be located at an appropriate location on the Western Power Pool website~~Any procedures, guides or reference materials can be found in the Input Data File Specification Document located on the WPP website. The Program Operator will use the data submitted by Participants and any program defined ~~Uncertainty Factor~~ inputs as described in *BPM 203 Program Sharing Calculation Inputs* ~~amount~~ to calculate a~~n indicative~~ Sharing Calculation ~~value~~ result for each Participant. This ~~calculation~~ result is considered indicative for all Operating Days in the assessment window except those Days being scheduled on the current Preschedule Day. ~~The calculation is indicative because it does not result in a binding assignment of Holdback to Participants~~. This information will be given to Participants through the Ops Client.

If the Multi-Day-Ahead Assessment indicates low risk of a potential Sharing Event, the Program Operator may consider early release of a portion, or all of the capacity forecasted to be surplus to a Participant's needs as indicated by a positive Sharing Calculation result. This process is further explained in *BPM 204 Holdback Requirement*. Additionally, if the Multi-Day-Ahead Assessment indicates the potential for a Sharing Event that exceeds the amount of forecasted surplus capacity, the Program Operator will notify the Participants that there is the potential for insufficient holdback to meet the total deficit as calculated by the Sharing Calculation. This allows Participants time to look for alternatives to better manage calculated deficiencies.

Figure 1~~Figure 1~~ shows two examples of the timing associated with the Multi-Day-Ahead Assessment. This figure is developed ~~prospectively meaning it is~~ from the perspective of the current Day and looks forward.

In example one the current Day is the first Friday on the timeline. Using information provided from Participants the Program Operator will conduct the Multi-Day-Ahead Assessment as described above. In this example the Multi-Day-Ahead Assessment window is from the first Saturday through the second Friday on the timeline. The first Day (Saturday) in the Multi-Day-Ahead Assessment is not of interest because the

process of running the Sharing Calculation result and allocating Hh~~h~~oldback Capacity has already been completed. The second and third Days (Sunday and Monday) represent the Days being scheduled and will potentially result in a ~~binding~~ Hh~~h~~oldback ~~obligation~~Requirement. Days 4 through 7 are indicative and may change with subsequent updates to input data.

In the second example the current Day is the first Monday on the timeline. Using information provided from Participants the Program Operator will conduct the Multi-Day-Ahead Assessment as described above. In this example the Multi-Day-Ahead Assessment window is from the first Tuesday through the second Monday on the timeline. The first Day (Tuesday) represents the Day being scheduled and will potentially result in a ~~binding h~~ Holdback Requirement~~obligation~~. Days 2 through 6 are indicative and may change with subsequent updates to input data.

Figure 1. Indicative Multi-Day-Ahead Assessment and corresponding data submissions.

3. Preschedule Day

The Operations Program will respect the WECC Scheduling Calendar ~~(2023 Scheduling Calendar included for reference)~~[1]. On the Preschedule Day, no later than ~~at~~ 05:45 PPT, the Program Operator will execute the Sharing Calculation for each Operating Day being scheduled. The Preschedule Day Sharing Calculation utilizes the same inputs as the Multi-Day-Ahead Assessment and has the same submission deadline of 05:20 PPT. Exceptions to the default scheduling practices will be made for holidays and new months as specified by WECC. When the Preschedule Day is not the Day prior to the Operating Day, the Program Operator will rerun the Sharing Calculation each interim Day; these runs will not alter the Holdback Requirement set on the Preschedule Day. The Sharing Calculation assessment that is performed on the Preschedule Day sets the Holdback Requirement.

Between 05:20 PPT and 06:35 PPT Participants in any Subregion not containing a central transmission hub, shall provide the information in *BPM 202 Participant Sharing Calculating* Inputs Section 7.3 and 7.4 as required. At 06:00 PPT the results of the Sharing Calculation will be made available to Participants in the Ops Client. Between 06:00 PPT and 06:30 PPT Participants will ~~i)~~ have an opportunity to utilize the day-ahead market to address any deficit as calculated by the Sharing Calculation, ~~ii) submit the information necessary to match surplus Participants with deficit Participants for those Participants in a Subregion not containing a central transmission hub permitting energy deliveries to that hub from any point within such Subregion~~, and ~~iii)~~ submit any Voluntary Holdback as defined in *BPM 202 Participant Sharing Calculation Inputs*. By 06:30 PPT deficit Participants will notify the Program Operator using the Ops Client of the amount of holdback they need from surplus Participants in the Operations Program. At 06:35 PPT the Program Operator will execute the allocation methodology ~~pairing~~ that matches ~~surplus and deficit~~ Participants. The results of the allocation will be posted to the Ops Client by 07:00 PPT and includes MW values and ~~surplus/deficit~~ Participant ~~pairs~~ matches. Between 07:00 PPT and 120 minutes before the operating hour surplus Participants can perform bilateral exchanges of holdback via Ops Client. The Preschedule Day is presented in Figure 2~~Figure 2~~.

4. Operating Day

Participants provide their final submission of forecast data and finalize and notify the Program Operator of any bilateral exchanges of holdback 120 minutes before the operating hour. The Program Operator utilizes the forecast data to perform a final execution of the Sharing Calculation, which occurs 105 minutes before the operating

[1] https://www.wecc.org~~/Administrative/09_Fulkerson_2023-WECC%20Preschedule%20Calendar%20Version-1_with%20Sched%20Mtg.pdf~~

hour. The results of the Sharing Calculation on the Operating Day are completed no later than 90 minutes before the operating hour and are intended to inform a Participant's decision about the amount of energy to be deployed. The calculation is indicative because the deficit Participant can claim up to the amount of holdback that they were allocated on the Preschedule Day. The Participant responsible for tagging the Energy Deployment must have the e-tag creation request completed by 60 minutes prior to the operating hour. Tagging and scheduling practices are described in *BPM 205 Energy Deployment*. The Preschedule Day and Operating Day Schedule is presented in Figure 2.

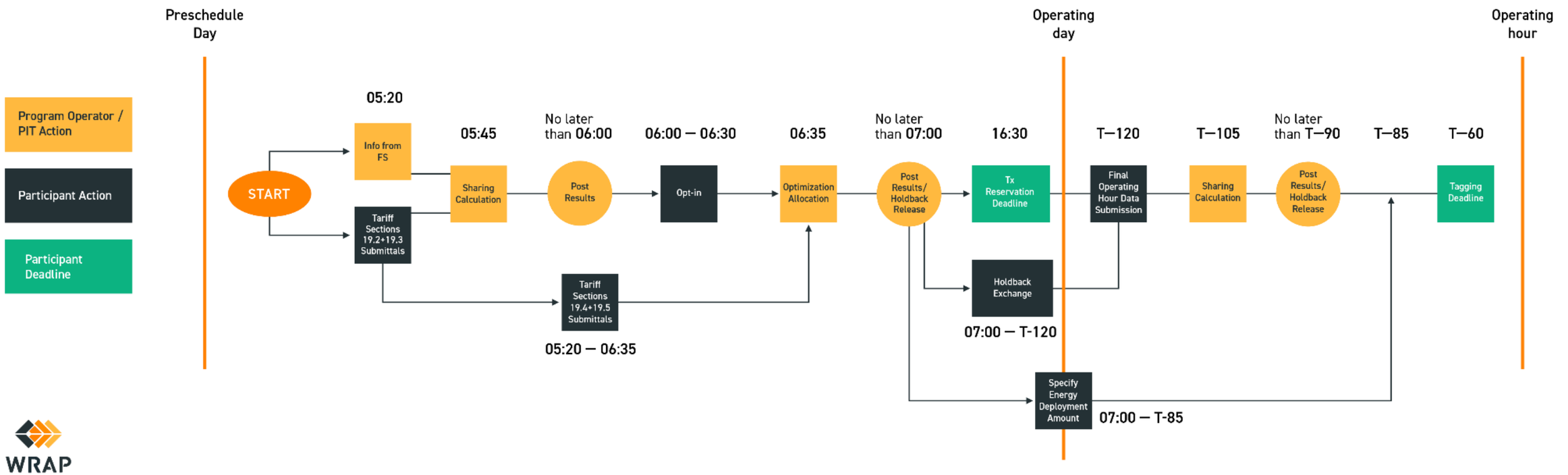

Figure 2. Preschedule Day and Operating Day Schedule.

WESTERN POWERPOOL

Western Resource Adequacy Program

202 Participant Sharing Calculation Inputs

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
202	0.1	RAPC Glance Version	Beau Beljean	7/5/2024
202	0.2	Public Comment	Beau Beljean	7/9/2024
202	0.3	RAPC & PRC Discussion	Beau Beljean	8/14/2024
202	0.4	RAPC Endorsement	Beau Beljean	9/4/2024
202	0.5	Board Consideration	Beau Beljean	9/13/2024
202	1.0	Board Approved	Rebecca Sexton	9/19/2024
202	2.0	Annual BPM Changes	Michael O'Brien	12/24/2025

Table of Contents

1. Introduction

The Participant Sharing Calculation Inputs Business Practice Manual (BPM 202) outlines data inputs submitted by Participants in the Operations Program and used in the Sharing Calculation to identify any hour in which a Participant is forecast to have a capacity deficit and other Participants are forecast to have a capacity surplus (a Sharing Event). BPM 202 describes each of these Participant inputs and explains the Sharing Calculation.

1.1 Intended Audience

BPM 202 is intended for individuals or entities that are interested in or currently participating in the Western Resource Adequacy Program (WRAP). BPM 202 is particularly useful for those that support and have responsibility for the Operations Program on a day-to-day basis. This could include trading and scheduling staff, front-office technology and systems support staff, or other similar roles.

1.2 What You Will Find in This Manual

BPM 202 contains an explanation on all inputs to the Sharing Calculation that Participants submit for the Operations Program.

1.3 Purpose

The purpose of BPM 202 is to explain Participant-supplied inputs to the Sharing Calculation and how they are used in the Operations Program.

1.4 Definitions

All capitalized terms that are not otherwise defined in BPM 202 or another BPM have the meaning set forth in the Tariff ~~All capitalized terms have the meaning as put forth in the Tariff definitions. Any capitalized terms not found in the Tariff that are specific to BPM 202 will be defined in this section~~:

Contingency Reserves Adjustment: As defined in *BPM 103 FS Capacity Requirement*.

Contingency Reserves Obligation (CRO): The amount of contingency reserves the Participant is carrying during the operating hour equal to:

i) 3% of Load Forecast for which the Participant is the ~~WRAP~~ LRE and maintains the contingency reserve requirement
ii) plus 3% of load for which the Participant is not the ~~WRAP~~ LRE but has assumed an obligation to carry Contingency Reserve through a contractual arrangement
iii) plus 3% of generation used to meet any load for which the Participant is the LRE and maintains its Contingency Reserve requirement
iv) plus 3% of generation utilized to meet ~~WRAP L~~load for which the Participant is

not the LRE but has assumed an obligation to carry Contingency Reserve through a contractual arrangement.

Forced Outages: For Thermal Resources, Storage Hydro Qualifying Resources (using QCC MWs) or Energy Storage Resources, the immediate reduction in capacity, output, unanticipated failure, curtailment or derate of network service, firm or conditional firm transmission or other cause that is beyond the control of the owner or operator of the resource.

Operations Program Capacity Need: A Sharing Calculation component that refers to the total hourly capacity requirement a Participant has forecasted in the Operations Program. The Hourly Capacity Need is the sum of a Participant's Load Forecast adjusted for Demand Response Capacity Resource (i.e. load reduction) plus the hourly forecasted CRO and the Uncertainty Factor.

Performance Adjustments: A Sharing Calculation component that is the sum of variances of over and under performance for hourly forecasts of Run-of-River, wind and solar resources and the net hourly value of Forced Outages relative to the monthly value submitted in the Participant's FS Submittal.

Program Interface Tool (PIT): As defined in *BPM 201 Operations Program Timeline*.

Resource-Specific Capacity Agreements: As defined in *BPM 106 Qualifying Contracts*

Thermal Resource: As defined in *BPM 101 Advance Assessment.*

2. Background

Participants are required to submit specific data for the Forward Showing (see *BPM 108 Forward Showing Submittal Process*). Some of these data are also used as inputs into the Operations Program. For example, VERs, ROR, Contingency Reserves, and Forced Outages included in or submitted as part of the FS Submittal are compared to nearer term forecasts submitted during the Operations Program. This leads to a comparison between near term forecast values in the Operations Program and the values submitted in the Forward Showing, resulting in delta values for the inputs that are used in the Sharing Calculation. BPM 202 describes the required Participant inputs to the Sharing Calculation.

3. Components of the Sharing Calculation equation

The Sharing Calculation compares each Participant's FS Capacity Requirement (see *BPM 103 Forward Showing Capacity Requirement*) - adjusted for Forced Outages and hourly forecasts of resource availability, resource performance, load, and Contingency Reserves relative to theose included in or submitted as part of the FS Submittal - to each

Participant's capacity need for each hour in the Multi-Day-Ahead Assessment, Preschedule Day, and Operating Day. The values submitted by the Participant for each hour are compared to the values submitted in the in the corresponding monthly FS Submittal~~Forward Showing~~. For a given hour the Sharing Calculation identifies Sharing Events in which any Participants are forecast to have ~~capacity deficiencies~~negative Sharing Calculation results. Additional program (i.e., non-Participant) inputs to the Sharing Calculation, such as the Uncertainty Factor, are described in *BPM 203 Program Sharing Calculation Inputs*. The Sharing Calculation is defined as:

Equation 1 – Simplified Sharing Calculation

$$\boldsymbol{Sharing\ Calculation} = \boldsymbol{FS\ Capacity\ Requirement} - \boldsymbol{Operations\ Program\ Capacity\ Need} + \boldsymbol{Performance\ Adjustments}$$

where

$$\boldsymbol{FS\ Capacity\ Requirement} = (P50\ Peak\ Load\ Forecast) * (1 + FSPRM) + Contingency\ Reserve\ Adjustment$$

and

$$\boldsymbol{Operations\ Program\ Capacity\ Need} = \boldsymbol{Load\ Forecast} - \boldsymbol{Demand\ Response\ Capacity\ Resources} + \boldsymbol{Contingency\ Reserve\ Obligation} + \boldsymbol{Uncertainty\ Factor}$$

and

$$\boldsymbol{Performance\ Adjustments} = \Delta\boldsymbol{Forced\ Outages} + \Delta\boldsymbol{RoR\ Performance} + \Delta\boldsymbol{VER\ Performance}$$

Where:

Demand Response Capacity Resource, as defined in the Tariff, refers to a capacity resource with a demonstrated capability to provide a reduction in load or otherwise control load. Its value is treated as a reduction to the hourly Load Forecast in the Operations Capacity Need component of the Sharing Calculation.

Load Forecast is the hourly forecast of a Participant's WRAP load, expressed in MW, and to be submitted for each operating hour.

Uncertainty Factor, as described in the Tariff, is an input to the Sharing Calculation and is meant to account for the variances between forecasts of load, VERs, and Run-of-River Qualifying Resources for each operating hour on the Preschedule Day and the actual load and resource performance during such hour on the Operating Day. See *BPM 203 Program Sharing Calculation Inputs* for more details.

Δ Forced Outages refers, for any given operating hour, to the sum of:

(i) any change in Forced Outages of any of the Thermal Resources included in a Participant's Portfolio QCC, relative to the Forced Outages assumed in the FS Submittal by application of the Forced Outage Factor;

(ii) any change in Forced Outages of any of the Storage Hydro Qualifying Resources relative to the Forced Outages assumed in the calculation of a Participant's Resource QCC (expressed as forced QCC MWs);

(iii) any reduction in output capability of any of the Energy Storage Resources due to equipment failure or protection.
   a. In the first four (4) hours the Forced Outages MWs that can be claimed are equal to [(charge MW x duration)/ 4].
   b. For all hours beyond four (4) hours, the Forced Outages MW amount that can be claimed for an Energy Storage Resource shall not be greater than the monthly QCC.

(iv) any reduction in capacity of a Participant's Portfolio QCC resulting from constraints on firm transmission service rights.

Δ ROR Performance refers to any change, for any given operating hour, in expected performance of any of the ROR in the Participant's Portfolio QCC relative to the QCC of that Qualifying Resource.

Δ VER Performance refers to any change, for the subject hour, in expected performance of the VERs in the Participant's Portfolio QCC relative to the QCC of that Qualifying Resource. As defined in the Tariff, VERs are resources powered by a renewable energy source that cannot be stored by the facility owner or operator and that has variability that is beyond the control of the facility owner or operator, including but not limited to a solar or wind resource.

In summary:

Equation 2 – Detailed Sharing Calculation

$$\begin{aligned}&\boldsymbol{Sharing\ Calculation} = \\ &[(\boldsymbol{P50\ Peak\ Load\ Forecast}) * (\boldsymbol{1} + \boldsymbol{FSPRM}) + \boldsymbol{Contingency\ Reserve\ Adjustment}] \\ &- [\boldsymbol{Load\ Forecast} - \boldsymbol{Demand\ Response\ Capacity\ Resource} \\ &\qquad + \boldsymbol{Contingency\ Reserve\ Obligation} + \boldsymbol{Uncertainty\ Factor}] \\ &+ [\boldsymbol{\Delta Forced\ Outages} + \boldsymbol{\Delta RoR\ Performance} + \boldsymbol{\Delta VER\ Performance}]\end{aligned}$$

4. Inputs from Forward Showing Submittal

The Operations Program relies on data submitted in the Forward Showing Submittal (FS Submittal) that includes monthly values of the following:

(i) P50 Peak Load Forecast
(ii) FSPRM
(iii) Forced Outages
(iv) ROR QCC
(v) Solar QCC
(vi) Wind QCC
(vii) Contingency Reserves Adjustments

In addition, for ~~resource-specific contractual agreements~~Resource-Specific Capacity Agreements included in the FS Submittal such as "slice" contracts, adjustments are applied to the calculation of Forced Outages and Over/Under Performance. These adjustments are accounted for in data sent to the Operations Program, prior to the start of each Binding Season.

5. Inputs from the Operations Program

In the Operations Program, Participants are required to prepare and provide data in a format specified by the Program Operator. These data must adhere to a submission schedule to allow the Sharing Calculations to run with as up-to-date and complete data as possible. The Program Operator is responsible for the transfer of input data that is processed according to a predefined schedule to inform Participants of any Sharing Events. A user interface provides Participants the means to view input upload status and error details, notifications and alerts, and Sharing Calculation results – this is called the Program Interface Tool (PIT) or Ops Client.

Moreover, it is the responsibility of the Program Operator to develop, test, implement and maintain the form and format of all inputs and to ensure the latest version of these are made available to Participants. The Program Operator also ensures that Participants are given access to portals, links, and/or any other data upload protocols prior to the start of any Binding Season to allow successful participation in the Operations Program. Any procedures, guides or reference materials ~~related to the~~can be found in the ~~i~~Input ~~and~~ Ddata Ffile Sspecification document ~~are posted~~located on the WPP website.

The Sharing Calculation, which is the mechanism to determine whether a participant is surplus or deficit on any given hour of the operating day, relies on data submitted in the Operations Program by the Participant which includes hourly values of the following:

(i) Load Forecast
(ii) Forced Outages
(iii) Forecasted ROR output
(iv) Forecasted wind output
(v) Forecasted solar output
(vi) Contingency Reserves Obligation

The Sharing Calculation also includes an Uncertainty Factor as a term in the equation. The Uncertainty Factor is not a Participant provided value and is described in more detail in *BPM 203 Program Sharing Calculation Inputs.*

5.1 Load Forecast

The Load Forecast is the Participant's hourly forecast of its WRAP load, expressed in MW, submitted for each operating hour. The data submitted for Load Forecasts shall account for the total load/demand the Participant is responsible for serving under WRAP and be sourced from the same data that was utilized in the FS Submittal. If there are additional third-party loads or excluded loads within a Participant's Balancing Authority Area (BAA), these shall not be accounted for in the Load Forecasts submitted in the Operations Program.

5.2 Forced Outages Forecast

The Forced Outage is the hourly forecast of a Participant's Forced Outages (including derate), expressed in MW, and to be submitted for each operating hour. The data submitted for Forced Outages forecasts shall account for MW reduction in:

1. Total ~~portfolio~~ generating capability portfolio where the portfolio is defined as:
    a. Any resource in the Forward Showing for which the Program Operator has calculated an Equivalent Forced Outage Factor (EFOF) or the Participant has supplied a Forced Outage Factor.
    b. Any ~~purchase contract~~Resource-Specific Capacity Agreement in the Forward Showing where the Participant has assumed the outage risk as the purchaser. It is the responsibility of the Participant to work with the seller to determine how much of an outage is attributable to the Participant's contract.
2. A curtailment or derate of network service, firm or conditional firm transmission being utilized to bring resources and/or contracts shown in the Forward Showing Submittal to load. Curtailments and derates to non-firm transmission shall not be accounted for in the Forced Outages forecasts.

Additionally, the Forced Outages or derate must result in an actual loss of generating capability. If, for example, the outage is on a hydro unit and there is insufficient water in storage or inflow to utilize the lost capacity then the outage may not be claimed.

Due to limited dispatchability and dependency on fuel supply, must-take Thermal Resources are not given a Forced Outage Factor. Any derate, outage, or transmission

curtailment resulting in a reduction of generation capability for must-take resources, shall not be accounted for and shall be excluded from Forced Outages forecasts.

5.3 Forecasted ROR

The ROR forecast is the hourly forecast of a Participant's ROR performance, expressed in MW, and to be submitted for each operating hour. The data submitted for ROR forecasts shall account for the forecasted MW output on any given operating hour for the Participants' ROR included in the FS Submittal.

Unless specified under a ~~purchase contract~~Resource-Specific Capacity Agreement listed in a Participant's FS Submittal ~~per *BPM 106 Qualifying Contracts* (i.e. JCAF)~~, a Participant with ROR will be responsible for over/under performance of ROR forecasts.

5.4 Forecasted Wind Output

The wind resource forecast is the hourly forecast of a Participant's wind resource performance, expressed in MW, and to be submitted for each operating hour. The data submitted for wind resource forecasts shall account for the forecasted MW output on any given operating hour for the Participant's wind resources included in the FS Submittal.

Unless otherwise specified under a Resource-Specific Capacity Agreement ~~purchase contract~~ listed in the FS Submittal ~~per *BPM 106 Qualifying Contracts* (i.e. JCAF)~~, a Participant with wind resources will be responsible for over/under performance of wind resource forecasts.

5.5 Forecasted Solar Output

The solar resource forecast is the hourly forecast of a Participant's solar resources performance, expressed in MW, and to be submitted for each operating hour. The data submitted for solar resource forecasts shall account for the forecasted MW output on any given operating hour for the Participants' solar resources included in the FS Submittal.

Unless otherwise specified under a Resource-Specific Capacity Agreement ~~purchase contract~~ listed in a Participant's FS Submittal ~~per *BPM 106 Qualifying Contracts* (i.e. JCAF)~~, a Participant with solar resources will be responsible for over/under performance of solar resources forecasts.

5.6 Contingency Reserves Obligation

As defined above, the CRO is the total amount of contingency reserves the Participant is carrying during the operating hour.

The data submitted for CRO is intended to help ensure that sufficient capacity is withheld to cover a Participant's CRO in MW for any given hour.

5.7 Uncertainty Factor

The Uncertainty Factor is meant to account for the variances between forecasts of load, VERs, and ~~Run-of-River Qualifying Resources~~ROR for each operating hour on the Preschedule Day and the actual load and resource performance during such hour on the Operating Day. The Uncertainty Factor helps ensure that Participants retain capacity to account for near-term forecast error that would underestimate capacity needs, overestimate generation capability/availability (i.e., variances in the upward direction for load and variances in the downward direction for resource performance). See more details in *BPM 203 Program Sharing Calculation Inputs.*

6. Forecasting Methodology and Data Evaluation

There are two (2) types of forecast methodologies a Participant may use for forecasting Load, ROR, wind output and solar output:

(i) a third-party forecasting tool/software or
(ii) a proprietarily developed algorithmic forecasting tool.

A Participant may elect to use one or both of these methodologies, but in any case, is required to submit to the Program Administrator, at least 90 days prior to the start of its first Binding Season, a narrative description of the methodology used for forecasting. This narrative shall include at minimum and without limitation:

- Type of methodology (i.e., third-party or proprietarily developed)
- Description of methodology
- List of data types forecasted using the methodology submitted in the Operations Program (i.e., Load, ROR, wind output and solar output)
- Description of limitations of methodology, particularly describing any inability to manually override forecast data and inputs to the Sharing Calculation. The purpose here is to demonstrate that the Participant is not able to manually modify forecasts with the intent of increasing a Participant's access to Holdback Capacity in the Operations Program or limiting their requirement to provide Holdback Capacity in the Operations Program.

In the event there is a change in methodology, the Participant must provide an updated narrative description to the Program Administrator as soon as practicable.

In addition, the Program Administrator and the Program Operator shall monitor and evaluate on a regular basis forecast data performance and ensure feedback is provided back to Participants to help identify inaccurate data.

7. Input Data Files

7.1 Multi-Day File

The data requested in the Multi-Day (MD) file is necessary to run the Operations Program Sharing Calculation, which is the mechanism to determine whether a Participant is surplus or deficit on any given hour of the Operating Day.

MD files shall include at least seven Operating Days' worth of forecast data.

Per *BPM 201 Operations Program Timeline*, Participants are required to submit a MD file no later than 05:20 Pacific Prevailing Time (PPT) on the Preschedule Day and according the WECC scheduling calendar.

7.2 Operating Day File

The data requested in the Operating Day files (OD files) is mainly used for informational purposes in the Operations Program. As the binding obligations are set on the Preschedule Day under the Tariff, input data submitted in the OD files is used to post updated Sharing Calculation results, hour by hour, for the Operating Day. These updated Sharing Calculation results help inform a Participant about its position relative to the Sharing Calculation result posted on the Preschedule Day.

OD files include at least 24 (or 23 ~~on a daylight savings time day~~for the spring transition to daylight savings time) operating hours' worth of forecast data and are to be submitted every hour throughout the Binding Season.

Per *BPM 201 Operations Program Timeline*, Participants are required to submit an Operating Day file no later than one hundred and twenty (120) minutes prior to the start of any given operating hour.

7.3 Point Limit File

The data requested in the Point Limit (PL) files is to inform the Operations Program about the transmission points a Participant can deliver to and take receipt from other Participants. PL file inputs are essential to determine allocation and deliverability of any Holdback Requirement in a Subregion without a Central Hub.

PL files shall include at least 24 (or 23 ~~on a daylight savings time day~~for the spring transition to daylight savings time) operating hours' worth of data including but not limited to transmission points for delivery of any Holdback Requirement and order of priority.

Per *BPM 201 Operations Program Timeline,* Participants shall ensure the PL files are submitted after 05:20 PPT when the Sharing Calculation results post and before 06:35 PPT.

Data submitted in the PL files serve as input needed for optimization and validation in the Operations Program.

7.4 Point-To-Point Limit File

The Operations Program is designed to optimize allocation and deliverability of any Holdback Requirement. Given potential transmission constraints within a Subregion and the desire to share as much diversity as possible, the data requested in the Point-To-Point Limit (PTPL) is to inform the Operations Program about the transmission points where wheeling capability may occur. Inputs from the PTPL files are essential to determine a Participant's ability and order of priority to deliver any Holdback Requirement on defined transmission wheeling paths and inter-Subregion transmission connectivity.

PTPL files shall include at least 24 (or ~~twenty-five (~~2~~3~~5~~)~~ ~~on a daylight savings time day~~~~for~~ the spring transition to daylight savings time) operating hours' worth of data including but not limited to point-to-point transmission wheeling paths and order of priority.

Per *BPM 201 Operations Program Timeline*, Participants shall ensure the PTPL files are submitted after 05:20 PPT when the Sharing Calculation results post and before 06:35 PPT. Data submitted in the PTPL files serve as input needed for optimization and validation in the Operations Program.

7.5 Voluntary Holdback File

The Voluntary Holdback data submission allows Participants to indicate to the WRAP the amount of Holdback Capacity that they would like to make available in excess of the surplus resulting from the Sharing Calculation. The intent of this submission is to indicate the MW value that can be made available. The points at which the Voluntary Holdback could be made available must be included in the Point Limits File.

The data requested in the Voluntary Holdback (VH) files is to inform the Operations Program about any additional capacity made available to the Subregion for any given hour. Input from the VH files is essential to determine allocation and prioritization of any Holdback Requirement.

Per *BPM 201 Operations Program Timeline*, Participants shall ensure the VH files are submitted after 05:20 PPT when the Sharing Calculation results are posted and before 06:35 PPT. Data submitted in the VH files serve as input needed for optimization and validation of the Operations Program, particularly for any given Sharing Event.

7.6 Actuals File

The data requested in the Actuals (AC) files is after-the-fact in nature - equivalent to the data submitted in the MD and OD files - reflecting the actual values of the data that was forecasted. The data collected from AC files is not a Sharing Calculation input. The Program Administrator and Program Operator use AC files data for analysis and reporting, particularly for data accuracy and performance.

Participants shall ensure that AC files are submitted no later than 168 hours after any given operating hour.

8. Sharing Calculation Results

The Sharing Calculation relies on inputs from both the Forward Showing and Operations Program. The Sharing Calculation result for any operating hour is calculated using the Sharing Calculation equation and its inputs listed in the sections above.

If a Sharing Calculation result for any given hour is positive, this indicates the Participant has surplus capacity.

Conversely, if a Sharing Calculation result for any given hour is negative, this indicates the Participant is capacity deficient, and therefore would constitute a potential Sharing Event.

The forecast data submitted for each operating hour is compared to the values assumed in the FS Submittal. This means the values submitted for each operating hour should use the same assumptions and the same general source data as the values submitted in the Forward Showing. Any mismatch can result in a Participant being erroneously identified as surplus or deficient. A Participant's ability to ensure that the Forward Showing and the Operations Program data submissions align with one another will streamline testing and trials and maximize both individual and group benefits.

9. Planned Outages

In the FS Submittal, Participants are required to provide information on all Qualifying Resources that are currently out of service with a scheduled return date that falls during or after the Binding Season. Capacity associated with such resources is then deducted from Participants' Portfolio QCC to ensure no credit is granted for such resources during the planned outage.

The aggregate of any additional outages that are planned to occur during the Binding Season but have not yet begun at the FS Submittal deadline must be within the Participant's remaining surplus or replaced with other supply. If a Participant takes a planned outage during the Binding Season, they are responsible for backfilling for the

entirety of the reduction in capacity and shallould submit zero Forced Outage MWs for that resource during the period of the planned outage.

A planned outage shall not justify a waiver of or exception to a Participant's holdback or energy delivery obligations under the Tariff. It is the Participant's responsibility to ensure necessary capacity is available to meet the Operations Program requirements, regardless of planned outage schedules or FS Submittal acceptance. In addition, planned outages MW amounts will not be included in the Forced Outages hourly data submitted in the Operations Program. Furthermore, if a planned outage that was included in the FS Submittal ends earlier in the month than expected and the resource becomes available, the Participant shall not include any Forced Outages MWs for that resource in the Operations Program.

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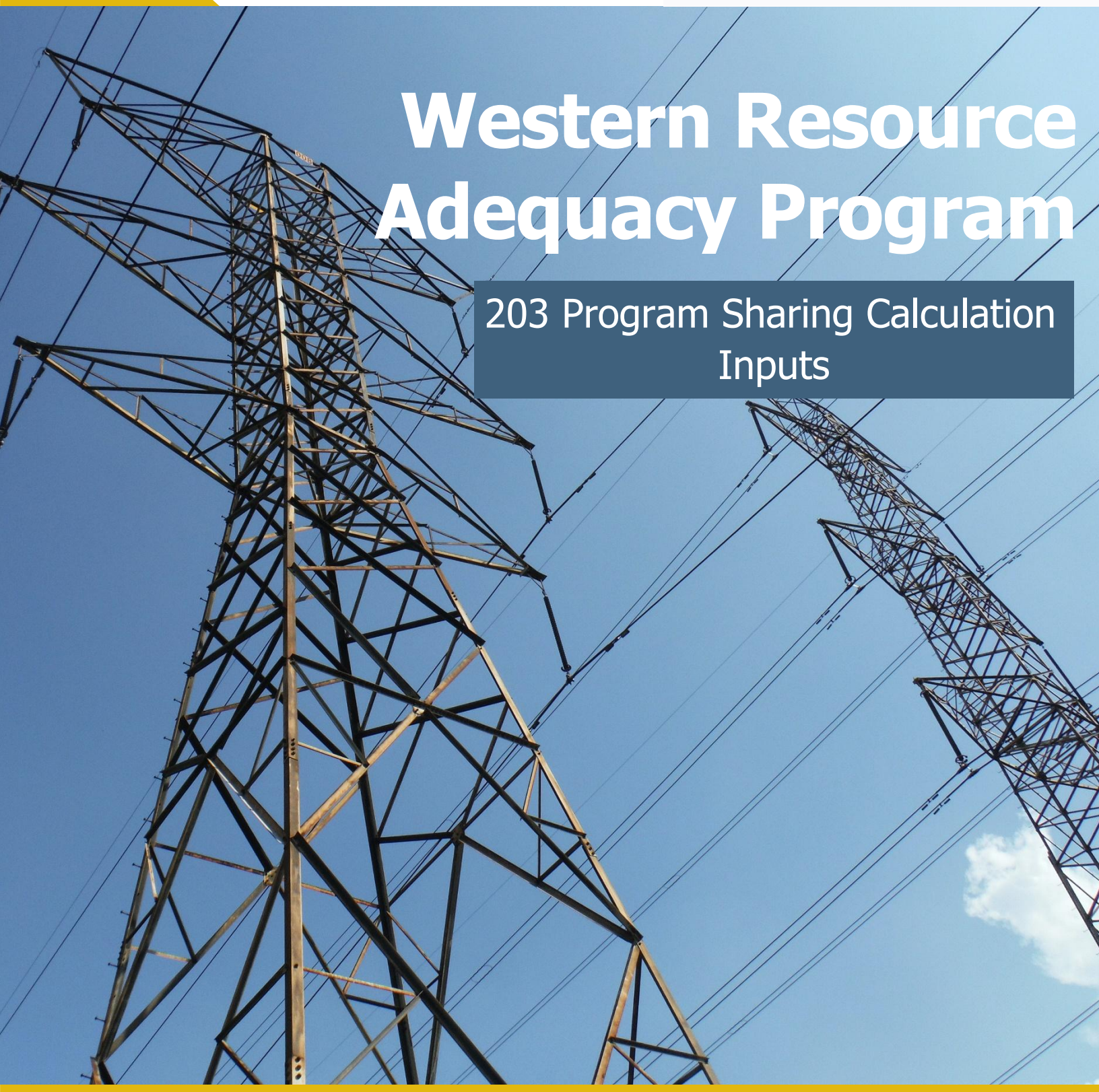

Western Resource Adequacy Program

203 Program Sharing Calculation Inputs

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
203	0.1	RAPC Glance Version	Maya McNichol	1/8/2024
203	0.2	Public Comment Version	Maya McNichol	1/9/2024
203	0.3	RAPC & PRC Discussion	Maya McNichol	2/9/2024
203	0.4	RAPC Endorsement	Maya McNichol	2/26/2024
203	A0.2	Public Comment Version A	Rebecca Sexton	3/20/2024
203	A0.3	RAPC & PRC Discussion	Maya McNichol	4/19/2024
203	A0.4	RAPC Endorsement	Maya McNichol	4/25/2024
203	A0.5	Board Consideration	Maya McNichol	5/9/2024
203	1.0	Board Approved	Maya McNichol	6/13/2024
203	2.0	Annual BPM Changes	Michael O'Brien	12/26/2025

Table of Contents

203 Program Sharing Calculation Inputs

1. Introduction

This Program Sharing Calculation Inputs Business Practice Manual (BPM 203) describes the Program Administrator inputs into the Western Resource Adequacy Program (WRAP) Operations Program Sharing Calculation. At present, there is only one such input, i.e., the Uncertainty Factor. *BPM 202 Participant Sharing Calculation Inputs* describes the Participant provided inputs to the Sharing Calculation.

1.1. Intended Audience

BPM 203 is intended for WRAP Participants and other interested individuals or entities. It will be particularly useful for those individuals that support and have responsibility for participation in the WRAP Operations Program on a day-to-day basis, including trading and scheduling staff, front-office technology and systems support staff, and staff with other similar responsibilities.

1.2. What Will You Find in This Manual?

BPM 203 details the Uncertainty Factor, which is a Program Administrator provided input to the Operations Program Sharing Calculation.

1.3. Purpose

BPM 203 explains the purpose, derivation, and use of the Uncertainty Factor in the Sharing Calculation of the Operations Program.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 203 or another BPM have the meaning set forth in the Tariff~~All capitalized terms that are not otherwise defined in BPM 203 have the meaning set forth in the Tariff. Any capitalized terms not found in the Tariff are defined here~~.

Forced Outages: As defined in *BPM 202 Participant Sharing Calculation Inputs.*

~~**Holdback Capacity:** As defined in *BPM 204 Holdback Requirement.*~~

Load Forecast: As defined in *BPM 202 Participant Sharing Calculation Inputs*.

Program Interface Tool: As defined in *BPM 201 Operations Program Timeline.*

Waiver: As defined in *BPM 209 Energy Delivery Failure Charge.*

2. Background

The WRAP Operations Program Sharing Calculation compares each Participant's FS Capacity Requirement (adjusted for forced outages and resource performance) to that Participant's capacity need for each hour in the Multi-Day-Ahead, Preschedule Day, and Operating Day timeframes. Each Participant sends updated forecasts of their expected load, outages, resource performance, and Contingency Reserves as inputs to the Sharing Calculation (see *BPM 202 Participant Sharing Calculation Inputs* for more information). Along with these Participant-supplied inputs, the Sharing Calculation includes an additional term for the Uncertainty Factor during each run of the Sharing Calculation for the Multi-Day-Ahead Assessment and the Preschedule Day.

3. Uncertainty Factor

The Uncertainty Factor is meant to account for the variances between forecasts of load, VERs, and Run-of-River Qualifying Resources for each operating hour on the Preschedule Day and the actual load and resource performance during such hour on the Operating Day. The Uncertainty Factor helps ensure that Participants retain capacity to account for near-term forecast error that would understate capacity needs, i.e. variances in the upward direction for load and variances in the downward direction for resource performance. Per Tariff section 20.1.1, the Uncertainty Factor is determined by the Program Administrator and set forth in the Business Practice Manuals. BPM 203 sets the parameters for the Uncertainty Factor in various scenarios, determined in consultation with, and to be implemented by, the Program Operator.

At a high-level, the Sharing Calculation takes a Participant's FS Capacity Requirement, adjusts it for performance changes (Fforced Ooutages, ROR, VERs), and then subtracts (among other things) the Load Forecast and Uncertainty Factor. The Uncertainty Factor effectively reduces a Participant's Sharing Requirement to account for variances between load and resource forecast on the Preschedule Day and actual load and resource performance on the Operating Day. Specifically, the Uncertainty Factor will initially be set at a default value of 10% of each Participant's Load Forecast, based on analysis of the best available data. The 10% value reflects the combination of 5% uncertainty in WRAP load and 5% uncertainty in WRAP generation.

Because the Uncertainty Factor is subtracted from a Participant's FS Capacity Requirement, the Uncertainty Factor will reduce a Participant's surplus when a Participant is otherwise surplus. The Uncertainty Factor will make an otherwise deficient Participant more deficient (eligible for more help from surplus Participants). When a Subregion is in a deficient condition overall, the Uncertainty Factor is incrementally reduced to increase a Participant's surplus, making more potential capacity available to

the Operations Program and Participants in need. The Program Operator may decrease the Uncertainty Factor for all Participants in that Subregion by increments of 0.5% of the Load Forecast for the ~~deficit~~ Subregion in a deficit condition until there is a sufficient overall surplus to meet the aggregate deficiency in that Subregion or the Uncertainty Factor reaches 3%, whichever comes first.

The Uncertainty Factor will be determined in the following ways:

- If the Subregion is not deficient in the Multi-Day-Ahead Assessment, meaning that the sum of all the Sharing Calculation results in the Subregion is zero or positive, the Uncertainty Factor remains 10% of Load Forecast for the Subregion.
- If the Subregion is deficient in the Multi-Day-Ahead Assessment, meaning that the sum of all the Sharing Calculation results in the Subregion is negative, the Uncertainty Factor is iteratively decreased by 0.5% of Load Forecast for the Subregion. This iterative step-down by 0.5% increments is repeated until there is sufficient Holdback Capacity to meet the deficiency in the Subregion or the Uncertainty Factor reaches 3%, whichever comes first. The revised Uncertainty Factor is then applied to each Participant's Sharing Calculation. An example is included in Table 1~~Table 1~~ below.

The allocation of Holdback Capacity to deficient Participants is described in *BPM 204 Holdback Allocation.*

The Uncertainty Factor to be utilized on the Preschedule Day is determined by the Program Administrator with assistance of the Program Operator two hours ahead of the Sharing Calculation run described in *BPM 201 Operations Program Timeline*. The final value of the Uncertainty Factor used for each hour of the Preschedule Day will be shown in the Program Interface Tool, as will the Uncertainty Factor values used in the Multi-Day-Ahead Assessment.

If during a Binding Season the Program Administrator identifies an issue with the implementation and application of the Uncertainty Factor which materially impacts a Participant's ability to provide load service, the Program Administrator may suspend the reduction in the Uncertainty Factor until such time as a change to correct the issue can be addressed through the normal governance process (as detailed in the BPM 300's Stakeholder Engagement series).

The Program Administrator will propose an updated value, using a data driven approach, for the default Uncertainty Factor (initially set at 10%) after the Summer 2025 Binding Season and prior to the start of the Summer 2026 Binding Season. If the proposed

updated default Uncertainty Factor is endorsed by RAPC and approved by the Board, this BPM will be updated to reflect the new default value.

Table 1. Uncertainty Factor example for deficient Subregion.

Participant	A	B	A	B	A	B	A	B	A	B	A	B
Uncertainty Factor	10.00%	10.00%	9.50%	9.50%	9.00%	9.00%	8.50%	8.50%	8.00%	8.00%	7.50%	7.50%
P50+PRM	148	120	148	120	148	120	148	120	148	120	148	120
Load Forecast	100	150	100	150	100	150	100	150	100	150	100	150
Uncertainty MWs	10	15	9.5	14.25	9	13.5	8.5	12.75	8	12	7.5	11.25
Sharing Calculation Result	38	-45	39	-44	39	-44	40	-43	40	-42	41	-41
Subregion Total	-7		-5		-5		-3		-2		0	

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Western Resource Adequacy Program

204 Holdback Requirement

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
204	0.1	RAPC Glance Version	Maya McNichol	7/3/2024
204	0.2	Public Comment Version	Maya McNichol	7/9/2024
204	0.3	RAPC & PRC Discussion	Maya McNichol	8/10/2024
204	0.4	RAPC Endorsement	Maya McNichol	8/23/2024
204	0.5	Board Approval	Maya McNichol	8/29/2024
204	1.0	Board Approved	Rebecca Sexton	9/19/2024
204	2.0	Annual BPM Changes	Michael O'Brien	12/26/2025

Table of Contents

204 Holdback Requirement

1. Introduction

The Holdback Requirement Business Practice Manual (BPM 204) outlines the key processes associated with the Participant Holdback Requirements in the Western Power Pool (WPP) Western Resource Adequacy Program (WRAP) Operations Program. The Holdback Requirement is a MW quantity, determined on the Preschedule Day, that a Participant is required to be capable of converting into an Energy Deployment on a given hour of the Operating Day.

1.1. Intended Audience

BPM 204 is intended for WRAP Participants and other interested individuals or entities. BPM 204 is particularly useful for those responsible for their Participant organization's implementation and decision-making with respect to responding to and managing a Holdback Requirement, bilateral exchange of Holdback Requirements, and voluntary offers of capacity.

1.2. What Will You Find in This Manual?

BPM 204 consists of sections detailing the allocation of a Holdback Requirement to Participants for Subregions with a Central Hub and for Subregions without a Central Hub, the process for opting in to Holdback Capacity and the release of capacity not claimed on the Preschedule Day, bilateral exchange of holdback, voluntary offers of capacity, and early release of holdback. Related provisions are addressed in other BPMs. BPM 204 will be paired with *BPM 205 Energy Deployment, BPM 206 Settlement Pricing,* and *BPM 207 Settlement Process*.

1.3. Purpose

The purpose of BPM 204 is to provide implementing details of the Tariff rules for determining the surplus Participant, the deficient Participant, and the transaction quantity for Holdback Requirements.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 204 or another BPM have the meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff are defined here~~.

Forced Outage: As defined in BPM 202 Participant Sharing Calculation Inputs.

Optimization Allocation: The calculation in the Operations Program that assigns Holdback Requirement to Participants.

Point to Point Limits (PTPL) file: Described in the Input Data File Specification document which is located on the WPP website.

Point Limits (PL) file: Described in the Input Data File Specification document which is located on the WPP website.

Program Interface Tool (PIT): As defined in *BPM 201 Operations Program Timeline.*

2. Background

The Operations Program of the WRAP allows a Participant with a calculated capacity deficiency (or negative Sharing Calculation result) to require Participants with a calculated capacity surplus (or positive Sharing Calculation result) to make surplus capacity available and be prepared to deploy energy on the Operating Day at prices and quantities determined by the Program Administrator and Program Operator as prescribed by the WRAP Tariff, *BPM 205 Energy Deployment, BPM 206 Settlement Pricing*, and *BPM 207 Settlement Process*. The Holdback Requirement is a MW quantity, as determined on the Preschedule Day, that a surplus Participant is required to have availability for delivery as an Energy Deployment on a given hour of the Operating Day.

3. Sharing Calculation Run

On the Preschedule Day, each Participant is required to submit to the Program Operator an hourly forecast of i) expected load, ii) output of Variable Energy Resources (VER), iii) output of Run-of-River Qualifying Resource (ROR), iv) expected Contingency Reserve requirement and v) Forced Outage. These inputs are further described in *BPM 202 Participant Sharing Calculation Inputs*. These files are submitted by Participants, as detailed in *BPM 201 Operations Program Timeline,* and inform the Multi-Day-Ahead Assessment. After submission and following the timeline in *BPM 201 Operations Program Timeline*, the Program Operator will post the Sharing Calculation results to the Program Interface Tool (PIT).

4. Confirmation of Need for Holdback Capacity

After the Sharing Calculation results are posted to the PIT on the Preschedule Day, each Participant sees whether it is surplus, deficient, or neither. A Participant that has been calculated to have a capacity deficiency has the opportunity to confirm whether it would like to receive Holdback Capacity and the MW quantity it would like to claim, capped at the negative Sharing Calculation result of that Participant. A deficient Participant must confirm its need for and the amount of requested Holdback Capacity for a given hour (see~~i.e., Opt in per Figure 3 of~~ *BPM 201 Operation Program Timeline*). If a deficient Participant does not proactively confirm their need for Holdback Capacity per the timeline in *BPM 201 Operation Program Timeline*, the WRAP considers (i) that

Participant as not needing any assistance, and (ii) that Participant will not be eligible for any Energy Deployment on the Operating Day, and (iii) any capacity that may have been assigned as a Holdback Requirement to assist that deficient Participant is released from its obligation to the program per Section 9.

5. Voluntary Offers

Participants with excess supply that is not obligated to the WRAP through their positive Sharing Calculation results may voluntarily offer such supply to the WRAP as Voluntary Holdback. If the offering Participant has a positive Sharing Calculation result for such hour, this voluntarily offered capacity is in addition to the Participant's surplus capacity as calculated by the Sharing Calculation in Section 3. If the offering Participant has a negative Sharing Calculation result, the offered capacity will only be included in the allocation of Holdback Requirement so long as the offering Participant did not confirm a need for Holdback Capacity for such hour. Once capacity that is voluntarily offered into the Operations Program is allocated, it is deemed to be a binding obligation, meaning that ~~non-delivery fees~~Energy Delivery Failure Charges may be assessed for any Voluntary Holdback not delivered as part of a ~~required~~n Energy Deployment.

Participants use the Voluntary Holdback file to submit Voluntary Holdback to the Program Operator. Voluntary Holdback provisions must be in line with the timeline in *BPM 201 Operation Program Timeline* on the Preschedule Day for any ~~day~~ hour being scheduled during which the Participant would like to provide Voluntary Holdback. Voluntary Holdback must be in whole MW values for each hour for the given Operating Day being scheduled. Voluntary Holdback file parameters are described in the Input Data File Specification document on the WPP website.

Voluntary Holdback can be offered as early as seven days ahead of the Operating Day. This ~~just offers~~provides increased visibility for the Program Operator into the overall state of the Operations Program; deficient Participants cannot opt-in to receive Holdback Capacity from Voluntary Holdback prior to the opt-in window on the Preschedule Day. If a Participant offered Voluntary Holdback ahead of the Preschedule Day and then on a later day (either Preschedule or an earlier day) submitted a different offer of Voluntary Holdback, the PIT would use the most recent offer in the Optimization Allocation. Additionally, if a Participant offered Voluntary Holdback ahead of the Preschedule Day and then was determined to be deficient on the Preschedule Day by the Sharing Calculation results, the Voluntary Holdback that was previously submitted would not be utilized in the Operations Program.

6. Optimization Allocation

6.1. Subregion with Central Hub

Per the timeline in *BPM 201 Operation Program Timeline,* the Ops Program runs the Optimization Allocation. This allocation is done in two steps: the first is the allocation of voluntarily offered capacity and the second is the allocation of capacity as calculated by the Sharing Calculation.

The results of the Optimization Allocation are posted per the timeline in *BPM 201 Operation Program Timeline*. Any amount of Voluntary Holdback or surplus as calculated by the Sharing Calculation for a Participant that is in excess of the Optimization Allocation result for that Participant is released from any WRAP obligations.

6.1.1. Allocation of Voluntary Holdback

There are three cases for the allocation of Voluntary Holdback.

1. If the sum of all Voluntary Holdback offered is exactly enough to meet all deficient Participant requests for holdback, then each Participant who offered Voluntary Holdback is assigned its offered amount as its Holdback Requirement.

2. If the sum of all Voluntary Holdback offered is not enough to meet all assistance requested by deficient Participants, then the amount of Voluntary Holdback offered by each Participant is included as a term in its Holdback Requirement (see more below in Definition 3).

3. If the sum of all Voluntary Holdback offered is more than the sum of all deficient Participant requests for assistance, then each Participant who offered Voluntary Holdback is assigned a pro-rata Holdback Requirement ~~via this calculation~~as calculated in Definition 1.~~:~~

Definition 1: Holdback Requirement with only Voluntary Holdback
$$\textbf{Holdback Requirement}_{VH} = \textbf{Sharing Ratio}_{VH} * \sum \textbf{Requested Holdback Capacity}_{Part}$$
where $$\textbf{Sharing Ratio}_{VH} = \frac{\textbf{VH}_{Part}}{\sum \textbf{VH}_{Part}}$$ **and** $$\textbf{VH}_{Part} = \textbf{Voluntary Holdback of a Participant}$$

6.1.2. Allocation of Capacity as Calculated by the Sharing Calculation

In addition to any Voluntary Holdback, there may be more capacity required to be held back to meet all the requested need. This additional holdback is capped at the sum of the positive Sharing Calculation results in Section 3 for each surplus Participant in the Subregion. If there is not enough Voluntary Holdback to meet all assistance requested by deficient Participants, then the remaining portion of the Holdback Requirement for surplus Participants is calculated using the following methodology.

For a Subregion containing a Central Hub permitting energy deliveries to that Central Hub from any point within such Subregion, a Participant with a positive Sharing Calculation result will be allocated a percentage of the sum of all Voluntary Holdback offered in that Subregion subtracted from the sum of all Holdback Capacity requested by deficient Participants in that Subregion that is equal to their pro rata share of the surplus as determined by the Sharing Calculation. As shown in Definition 2, t~~T~~his will be done by first determining a Participant Sharing Ratio, which is found by dividing a Participant's surplus ($\text{Positive Sharing Calculation Result}_{\text{Part}}$) by the Subregion's total surplus, where the surplus is determined by the Sharing Calculation in Section 3 (i.e., prior to accounting for Voluntary Holdback). This ratio is then multiplied by the sum of the Subregion's Voluntary Holdback subtracted from the sum of the requested Holdback Capacity, and that result is the Participant's Sharing Calculation holdback term of the Participant's Holdback Requirement.

Definition 2: Allocation of Participant Holdback Capacity as calculated by the Sharing Calculation

$$\text{Holdback Requirement}_{SC} = \text{Participant Sharing Ratio} * \text{Total Holback Capacity}_{VH}$$

where

$$\text{Participant Sharing Ratio} = \frac{\text{Positive Sharing Calculation Result}_{Part}}{\sum \text{Positive Sharing Calculation Results}_{Part}}$$

$$\text{Total Holdback Capacity}_{VH} = \sum \text{Requested Holdback Capacity}_{Part} - \sum \text{VH}_{Part}$$

The Holdback Requirement for a surplus Participant in a Subregion with a Central Hub when the sum of all Voluntary Holdback offered is not enough to meet all assistance requested by deficient Participants is the Voluntary Holdback offered plus the Participant's allocation of the Holdback Capacity as calculated by the Sharing Calculation, noting that the Voluntary Holdback term may be zero.

The Holdback Requirement in a Subregion with a Central Hub is defined below.

Definition 3: Holdback Requirement in a Subregion with a Central Hub

$$\text{Holdback Requirement} = \begin{cases} \text{Holdback Requirement}_{VH} & \sum \text{VH}_{Part} > \sum \text{Requested Holdback Capacity}_{Part} \\ \text{VH}_{Part} & \sum \text{VH}_{Part} = \sum \text{Requested Holdback Capacity}_{Part} \\ \text{VH}_{Part} + \text{Holdback Requirement}_{SC} & \sum \text{VH}_{Part} < \sum \text{Requested Holdback Capacity}_{Part} \end{cases}$$

6.2. Subregion without Central Hub

For any hour, for any Subregion not containing a Central Hub, the Program Operator will conduct an optimization-based allocation to pair surplus and deficient Participants. The allocation methodology will utilize the points at which surplus Participants can deliver their Holdback Requirement, the points at which deficient Participants can take receipt of their allocation of the total Holdback Capacity, the transfer capability that

exists to the points at which surplus Participants can deliver and the points at which deficient Participants can take receipt, and voluntarily supplied capacity.

The optimization will generally attempt to prioritize (i) Voluntary Holdback; (ii) Holdback Capacity matched pursuant to the information provided on a nearest neighbor and cluster basis, allocated pro rata among Participants within such cluster; (iii) Holdback Capacity matched pursuant to the information provided and allocated among Participants within the same Subregion to the extent not matched and allocated under category (ii); and finally (iv) Holdback Capacity from Participants in another Subregion, paired with any transmission service offered per Section 14.3.2 of the Tariff.

6.2.1. Ensuring Whole MW Holdback Capacity

In any Subregion, for both the Voluntary Holdback and allocation of capacity as calculated by the Sharing Calculation, Participants will only be asked to hold back and deliver energy in 1 MW increments (meaning no fractional MWs). Allocation of the total Holdback Capacity to deficient Participants may result in non-integer values. To address this issue the following general methodology will be utilized:

- The surplus Participant's Holdback Requirement is allocated to each deficient Participant on a pro rata basis.
- If the amount of Holdback Capacity allocated to a deficient Participant is a non-integer value, the result is rounded to the nearest integer.
- The total unallocated MWs accumulated as a result of rounding are then distributed to each of the deficient Participants using a per-Participant, round-robin-based algorithm that attempts to minimize the biasing of allocation to any particular Participant.

7. Bilateral Transfer of Holdback

Any surplus Participant (A) may agree with any other surplus Participant (B) for Participant (A) to transfer to the second Participant (B) some or all of the Holdback Requirement established for Participant (A) for any hour on any Operating Day. Any such Holdback Requirement transfer shall be a bilateral arrangement settled outside the WRAP, provided, however, that both Participants of such Holdback Requirement transfer must notify the Program Administrator and the Program Operator in a timely manner using the PIT per *BPM 201 Operations Program Timeline*. Any necessary transmission arrangements and any transaction settlements shall be the sole responsibility of the Participants that are parties to such bilateral arrangement. The transferred Holdback Requirement that Participant (B) is responsible for making available to the WRAP will be settled with the deficient Participant for which it is holding

the capacity back and may deploy as energy via the WRAP settlement pricing as detailed in *BPM 206 WRAP Settlement Pricing* and Participant (B) will be responsible for any Energy Delivery Failure Charges for Energy Deployment resulting from the Holdback Requirement that was exchanged.

8. Release of Capacity

8.1. Program Early Release of Surplus

If the Multi-Day-Ahead Assessment indicates low risk of a potential Sharing Event, the Program Operator may consider early release of a portion or all of the surplus capacity (or indicative positive Sharing Calculation result) for Participants with a positive Sharing Calculation result prior to the Preschedule Day. Evaluation for early release of indicative positive Sharing Calculation result may include but is not limited to weather conditions, Participants' forecasts, date and time of the interval, application of a Safety Margin, and historical data. A process for determining early release of indicative positive Sharing Calculation result is included in Appendix A.

8.2. Participant Petition for Early Release of Surplus

Prior to the Preschedule Day, Participants may request release of indicative positive Sharing Calculation result based on a showing of extenuating circumstances. The decision to grant a request for the early release of a Participant's indicative positive Sharing Calculation result is to be made by the Program Administrator with support as requested from the Program Operator. A process for determining early release of indicative positive Sharing Calculation result is included in Appendix A.

9. Surplus not claimed on the Preschedule Day

On the Preschedule Day, any surplus capacity as calculated by the Sharing Calculation or offered as Voluntary Holdback is released in whole or in part to the extent one or more deficient Participants fail to confirm, per Section 4, their need for capacity for the subject hour. Once the surplus capacity is released on the Preschedule Day, that capacity is no longer obligated to the Program in any way and can be used by the Participant who was calculated surplus or offered it to the Program.

Appendix A – Process for Early Release of Surplus Capacity

A Participant may submit a request to the Program Administrator and Program Operator for the early release of indicative positive Sharing Calculation result for either the requesting Participant or that Participant's Subregion. To do this, the requesting Participant must notify the Program Administrator via e-mail of the early release request including the affected hour(s) and the affected day(s), the MW quantity of release being requested, and a description of the extenuating circumstance (if a Participant-specific request). The Participant must also notify the Program Operator via phone call to the Program Operator WRAP coordinator desk of the early release request including the affected hour(s), the MW quantity of release being requested, and a description of the extenuating circumstance (if a Participant-specific request). The notification to the Program Operator and the Program Administrator must occur after the results are posted in the PIT for the first Multi-Day Ahead Assessment that includes all the affected day(s) and no later than two Business Days prior to the Preschedule Day for any of the affected day(s). The Program Operator and Program Administrator will work together to determine if the following criteria have been met.

A.1 Program Early Release of Indicative Positive Sharing Calculation Result

The Program Administrator and Program Operator may consider early release of a portion or all of the indicative positive Sharing Calculation result for all Participants in a Subregion with a positive Sharing Calculation result prior to the Preschedule Day under the following conditions:

1. A request was made by a Participant in the Subregion for which it is requesting the early release of capacity; and
2. The Sharing Calculation run during the Multi-Day Ahead Assessment determines that no Participant has a negative indicative Sharing Calculation result for such hour; and
3. No Safety Margin was applied; and
4. WPP determines there is a low probability of a Sharing Event for the hour, meaning that:
    a. The sum of the positive Sharing Calculation results for such hour is greater than or equal to the sum of the P50 Peak Load Forecast for all Participants in the Subregion multiplied by the PRM plus sum of the Load Forecast for all Participants in the Subregion multiplied by the Uncertainty Factor; and
    b. On the first Preschedule Day that is no earlier than two Days prior to the Operating Day of such hour, all Participants in the Subregion must have a positive Sharing Calculation result for all hours being scheduled.

When all conditions are met, the Program Operator and Program Administrator may release up to:

$$Maximum\left(\sum \text{P50 Peak Load Forecast for all Participants in Subregion} * \text{PRM},\ \sum \text{Load Forecast} * \text{Uncertainty Factor}\right)$$

This amount will be distributed pro rata based on Sharing Calculation results to all or a portion of the Participants in the Subregion.

A.2 Participant Petition for Early Release of Indicative Positive Sharing Calculation Result

The Program Administrator and Program Operator may consider early release of a portion or all of the indicative positive Sharing Calculation result for a Participant with a positive Sharing Calculation result prior to the Preschedule Day under the following conditions:

1. The Program Administrator and Program Operator finds that an extenuating circumstance(s) exist(s). Extenuating circumstances justifying release of a Participant's indicative positive Sharing Calculation result may include, but are not limited to, such circumstances as extreme weather conditions, earthquakes, wildfires, geomagnetic disturbance events, tsunamis, government-declared states of emergency, civil unrest, and cyber security events; and
2. The Sharing Calculation run during the Multi-Day Ahead Assessment determines that the requesting Participant has a positive indicative Sharing Calculation result for such hour; and
3. No Safety Margin was applied; and
4. WPP determines there is a low probability of a Sharing Event for the hour, meaning that:
   a. The positive Sharing Calculation result for such hour is greater than or equal to the Participant's P50 Peak Load Forecast multiplied by the PRM plus Load Forecast multiplied by the Uncertainty Factor; and
   b. On the first Preschedule Day that is no earlier than two Days prior to the Operating Day of such hour, the requesting Participant must have a positive Sharing Calculation result for all hours being scheduled.

When all conditions are met, the Program Operator and Program Administrator may release up to:

$$Minimum(Maximum(\text{P50 Peak Load Forecast} * \text{PRM}, \text{Load Forecast} * \text{Uncertainty Factor}), \text{MW quantity of release requested})$$

In the event that a request is granted, the requesting Participant and all affected Participants will receive email notification from the Program Operator or Program Administrator alerting them of the early release of indicative positive Sharing Calculation result. This email notification will occur as soon as practicable and prior to one Business Day prior to the Preschedule Day for any of the affected day(s). The amount of indicative positive Sharing Calculation result that is released is treated as a negative adjustment to all future Sharing Calculation runs for such hour.

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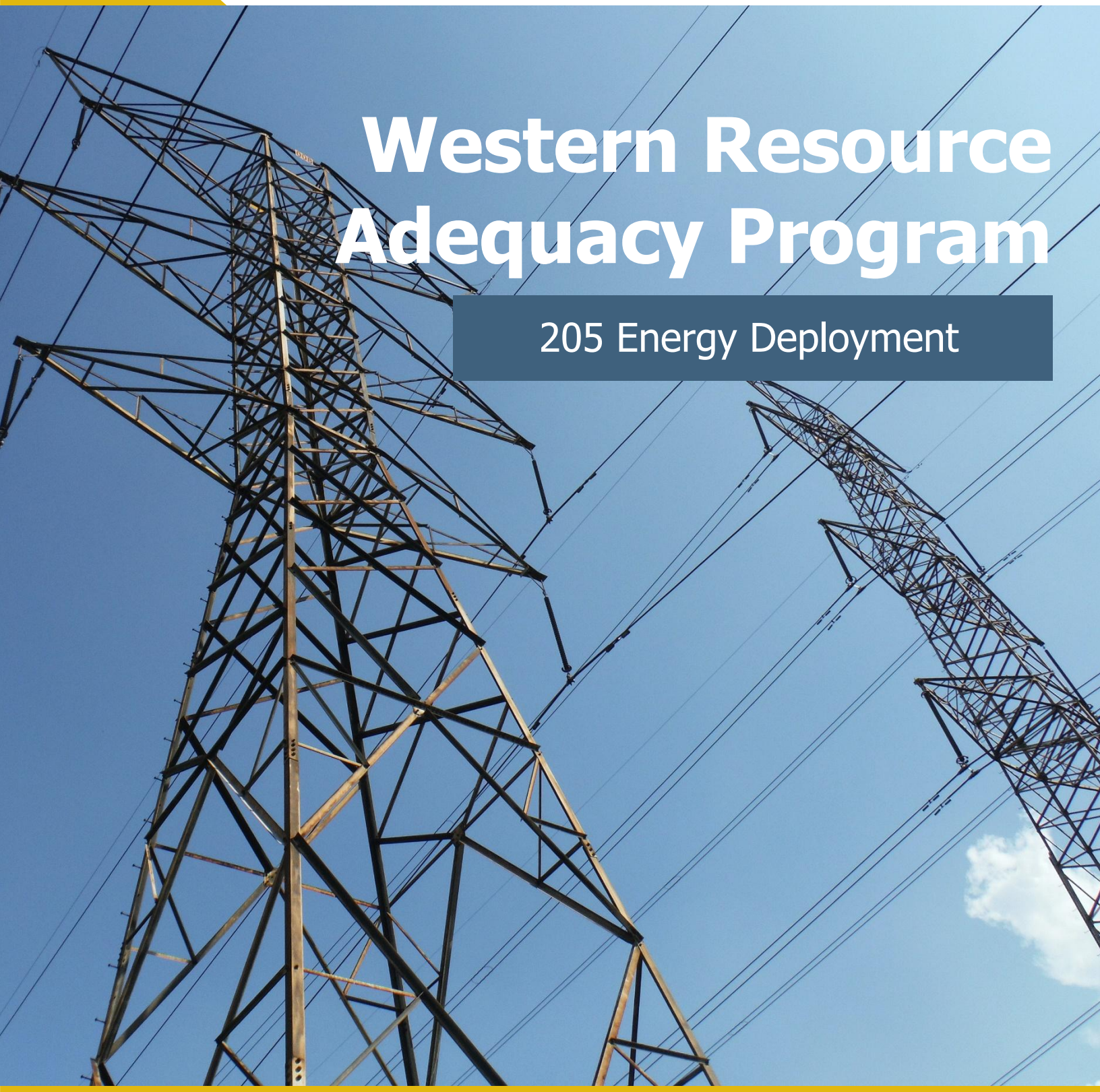

Western Resource Adequacy Program

205 Energy Deployment

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
205	0.1	RAPC Glance Version	Maya McNichol	7/3/2024
205	0.2	Public Comment Version	Maya McNichol	7/9/2024
205	0.3	RAPC & PRC Discussion	Maya McNichol	8/10/2024
205	0.4	RAPC Endorsement	Maya McNichol	8/24/2024
205	0.5	Board Approval	Maya McNichol	8/29/2024
205	1.0	Board Approved	Rebecca Sexton	9/19/2024
205	2.0	Annual BPM Changes	Michael O'Brien	12/26/2025

Table of Contents

205 Energy Deployment

1. Introduction

The Energy Deployment Business Practice Manual (BPM 205) outlines the key processes involved in the identification and dispatch of energy in the event of a Western Resource Adequacy Program (WRAP) Participant being energy deficient, claiming holdback, and confirming an energy delivery. BPM 205 describes the confirmation process Participants are to follow when a Sharing Event occurs, as well as guidance on scheduling and emergency events.

1.1. Intended Audience

BPM 205 is intended for the Western Power Pool (WPP) WRAP Participants and other interested individuals or entities. BPM 205 is particularly useful for those individuals that are responsible for, and support, participation in the Operations Program on a day-to-day basis.

1.2. What Will You Find in This Manual?

BPM 205 consists of sections detailing Participant requirements for input into the Program Interface Tool (PIT) on the operating day, the process of confirming and declining Energy Deployment, tagging and scheduling of Energy Deployment, Energy Deployment transmission requirements, and submission of data following Energy Deployment. BPM 205 is paired with *BPM 204 Holdback Requirement, BPM 206 Settlement Pricing, BPM 207 Settlment Process,* and *BPM 209 Energy Failure Delivery Charge*.

1.3. Purpose

To provide further details, guidance, and information that are appropriate or beneficial to the implementation of the WRAP Energy Deployment process, purpose, and methodology established by the Tariff.

1.4. Definitions

All capitalized terms that are not otherwise defined in ~~this~~ BPM 205 or another BPM have the meaning set forth in the Tariff. ~~Any capitalized terms not found in the Tariff are defined here~~.

Program Interface Tool (PIT): As defined in *BPM 201 Operations Program Timeline*.

Raise Hand Tool: A functionality in the Program Interface Tool to facilitate energy assistance, on a voluntary, bilateral basis between Participants.

2. Background

If on the Preschedule Day a Sharing Event is identified, a Holdback Requirement may be established for Participants with a positive Sharing Calculation result~~, or surplus Participant~~. The Holdback Requirement is a MW quanitity assigned to a Participant on the Preschedule Day (or to a Participant that offered Voluntary Holdback) that the Participant is required to be capable of converting into an Energy Deployment on a given hour of the Operating Day, to the extent a Participant with a negative Sharing Calculation result on the Preschedule Day (i.e., a deficient Participant) requests the energy. See *BPM 204 Holdback Requirement* for more details.

3. Confirming and Declining Energy Deployment

A deficient Participant will notify the Program Operator via the PIT of its need for Energy Deployment and confirm the amount of Energy Deployment required, up to the Participant's confirmed request for Holdback Capacity as established on the Preschedule Day. Notification of the need for Energy Deployment may be made as early as the Preschedule Day, but no later than 85 minutes prior to the start of any operating hour with an indicated deficiency. Any Participant that does not confirm required Energy Deployment deliveries for that hour by such deadline will be deemed to waive its right to Energy Deployment under the Operations Program for that hour. The deficient Participant will confirm the quantity of Energy Deployment for which it requires delivery via the PIT. The quantity may not exceed such deficient Participant's confirmed request for Holdback Capacity as determined on the Preschedule Day.

The Energy Deployment a surplus Participant can be required to supply for an hour shall not exceed the final Holdback Requirement calculated for such Participant on the Pres~~-S~~chedule Day, in addition to any duly reported exchange of Holdback Requirement, as of 85 minutes before the start of such hour.

Any Participant for which the Program Operator calculated during the Preschedule Day a negative Sharing ~~Requirement~~ Calculation result for the hour in question shall have zero Holdback Requirement and shall not have any Energy Deployment obligation for that hour.

3.1. Tagging and Scheduling

A Participant with a Holdback Requirement~~s~~ will reserve transmission for the entire Holdback Requirement MW amount on the Preschedule Day in line with ~~the timeline in~~ *BPM 201 Operations Program Timeline.* Participants will schedule their assigned Energy Deployment for each hour no later than 60 minutes prior to the start of such schedule hour (T-60). Participants may agree on alternate delivery provisions for Energy

Deployment. It is the obligation of the deficient Participant to create the E-Tag. Once the deficient Participant creates the E-Tag, it is the responsibility of the surplus Participant to take action on all subsequent E-tag requests related to the Energy Deployment initiated by the deficient Participant. The deficient Participant will provide any information to the surplus Participant necessary to update the E-tag.

In any Subregion with a Central Hub, the E-tag will reflect a path that has generation sources at the surplus Participant, goes through the hub, and is delivered at the load of the deficient Participant. However, Participants can bilaterally elect to schedule a different path.

In any Subregion without a Central Hub, the surplus Participant and deficient Participant are expected to deliver to and take receipt at, respectively, the point indicated in the PIT. However, Participants can bilaterally elect to schedule a different path.

3.2. Energy Deployment Transmission Requirements

The surplus Participant has the responsibility to ensure there is sufficient transmission to deliver from their generation to the Central Hub or the point specified in the PIT and the deficient Participant has the responsibility for ensuring there is sufficient transmission to deliver from the Central Hub or point specified in the PIT to their load, unless otherwise agreed upon.

Although there is shared responsibility for transmission procurement and reservation, the Energy Deployment is intended to occur on a single E-tag from source to sink with the deficient Participant responsible for E-tag creation.

4. Energy Delivery Failure

A Participant anticipating an Energy Delivery Failure should provide notice as soon as practicable after becoming aware of the anticipated failure. See *BPM 209 Energy Delivery Failure* for more information.

5. After-the-Fact Energy Deployment Information

Each Participant will also submit after-the-fact actual data for the data sets listed in Table 2 plus data for Energy Deployments.

Table 1. After-the-fact data to be submitted by Participants to the Program Operator.

After-the-Fact Energy Deployment Information
Hour Ending
From Counterparty
To Counterparty
Energy Delivery MWs
Source Subregion
Point of Delivery (if different from that indicated in PIT)
Sink Subregion
Point of Receipt (if different from that indicated in PIT)

This after-the-fact data will be submitted no later than 168 hours after the end of the operating hour as described in the Input Data File Specification document which is located on the WPP website.

6. Raise Hand Tool

The Raise Hand Tool in the PIT allows a Participant to notify other Participants of a request for assistance in any given hour of an Operating Day. The Raise Hand Tool may be used when a Participant identifies an unmet energy need in any given hour of an Operating Day that is outside of the assistance provided by Holdback Capacity (as described in *BPM 204 Holdback Requirement*) or Energy Deployments, meaning that any Participant can use the Raise Hand Tool regardless of their Sharing Calculation result. The PIT shows the hour(s) of any requests for assistance and which Participant has made the request. Other Participants can voluntarily contact the requesting Participant to offer assistance on a bilateral basis. Compensation, terms, and conditions of any resulting bilateral transactions will be determined by the affected parties outside of the Tariff. After-the-fact Energy Deployment information (see Section 5) is not required after bilateral transactions resulting from the Raise Hand Tool.

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Western Resource Adequacy Program

206 Settlement Pricing

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
206	0.1	RAPC Glance Version	Ryan Roy	7/18/2023
206	0.2	Public Comment Version	Ryan Roy	7/22/2023
206	0.3	RAPC & PRC Discussion	Ryan Roy	8/10/2023
206	0.4	RAPC Endorsement	Ryan Roy	8/11/2023
206	0.5	Board Consideration	Ryan Roy	8/18/2023
206	1.0	Board Approved	Ryan Roy	8/23/2023
206	1.1	2024-NTFP-2 Edits	Katie Gregor	1/27/25
206	2.0	Annual BPM Review	Elise Mousseau	12/26/25

Table of Contents

206 Settlement Pricing

1. Introduction

When a Participant ~~is facing~~has a ~~calculated~~negative Sharing Calculation result ~~resource deficiency in~~ for an hour of an Operating Day, the Operation~~s~~ Program of the Western Resource Adequacy Program (WRAP) requires Participants with surplus ~~resources to sell~~ to h~~H~~old back ~~C~~capacity that could result in an Energy Delivery to the deficient Participant ~~energy in~~ that would be supported by bilateral transactions at prices and quantities determined by the Program Administrator and Program Operator as prescribed by the ~~WRAP~~ Tariff. ~~The WRAP Tariff directed transactions are known as Holdback Requirements and Energy Deployments.~~ The Settlement Pricing Business Practice Manual (BPM 206) provides implementing details and practices regarding the WRAP-required pricing for Energy Deployments and Holdback Requirements, the identification of ~~Applicable Price Indices~~ ~~Index~~ a Subregion-specific Day-Ahead Applicable Index Price and a Real-Time Applicable Price Index used in such pricing, and the calculation and posting of settlement quantities and settlement prices.

1.1. Intended Audience

BPM 206 is intended for WRAP Participants and other interested individuals or entities. BPM 206 is particularly useful for those individuals that are responsible for their Participant organization's implementation of Holdback Requirement and Energy Deployment transactions, and ensuring that the pricing for those transactions complies with WRAP requirements.

1.2. What You Will Find in This Manual

BPM 206 consists of sections detailing the WRAP-required pricing for Energy Deployments and Holdback Requirements, the Applicable Price Indices used in such pricing, and the calculation of settlement prices. Related provisions are addressed in other BPMs. BPM 206 will be paired with *BPM 207 Settlement Process* which covers details such as how to access posted prices, the process for remedying disputed prices, and the process for handling changes in input data etc. In addition, *BPM 204 Holdback Requirement* and *BPM 205 Energy Deployment* provide implementing details on the Tariff rules for determining the seller (surplus Participant), the buyer (deficient Participant), and the transaction quantity for Holdback Requirements and for Energy Deployments. ~~*BPM 102 Reliability Metric Setting* defines the two Subregions of the WRAP Region.~~

1.3. Purpose

The purpose of BPM 206 is to provide implementation details of the settlement pricing for Holdback Requirement and Energy Deployment transactions in the WRAP.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 206 have their meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms that are not defined in the Tariff that are defined here:~~

Declined Energy: The amount of Holdback Requirement not affirmatively requested by a deficient Participant.

Final Settlement Revenue: The revenue paid by the deficient Participant to the surplus Participant for any hour of a given Day where the deficient Participant was responsible for Holdback Requirement or claimed an Energy Deployment.

Heavy Load Hour (HLH): ~~The hours f~~From hour ending 7 through hour ending 22, Monday through Saturday, excluding North American Electric Reliability Corporation (NERC) holidays.

Light Load Hour (LLH): ~~The hours F~~from hour ending 1 through hour ending 6 and from hour ending 23 through hour ending 24, Monday through Saturday, and all hours of the Day on Sundays and NERC holidays.

Possible Block Sale Revenue: The revenue, calculated separately for HLH and LLH blocks, that would have been realized had the surplus Participant sold a standard block with a MW value equal to the MW value in the hour with the highest sum of such Participant's Holdback Requirements obligated to all deficient Participants.

Unheld Energy: A quantity of energy that was not part of a Holdback Requirement, but that was part of a block that could have been sold in a Day-Ahead market had the Participant not been subject to a Holdback Requirement.

2. Background

When a surplus Participant is assigned a Holdback Rrequirement ~~one Participant provides Holdback Capacity~~ for ~~the benefit of~~ a deficient Participant, or provides Energy Deployment to a deficient Participant, the sale is a bilateral transaction between the two parties, but the pricing is dictated by the WRAP Tariff and calculated by the Program Administrator. Under the WRAP Tariff it is possible for a Participant to be allocated a Holdback Requirement for a deficient Participant that does not result in an Energy Deployment ~~to that deficient Participant, because the deficient Participant will not receive an Energy Deployment unless it expressly confirms on the Operating Day that it still requires the Energy Deployment~~ as described in *BPM 205 Energy Deployment*. The WRAP Tariff thus provides for calculation of separate prices to compensate for Holdback ~~Capacity~~ Requirements and Energy Deployment, along with separate calculations of i)

the amounts to be paid and received as compensation for Holdback ~~Capacity~~Requirements; and ii) the amounts to be paid and received as compensation for Energy Deployment. The WRAP Tariff-prescribed pricing also includes a Make Whole Adjustment component to compensate for a specific type of opportunity cost. BPM 206 also provides certain implementing details that the Program Administrator or Program Operator will use to calculate the settlement prices and quantities.

BPM 207 Settlement Process describes in detail the various settlement processes including but not limited to the mechanics of posting settlement information, invoicing, the process for addressing changes to or errors in published prices, missing data, timing requirements of the bilateral settlement process and changing the Applicable Price Index .

3. Applicable Price Index

Two Subregions have been established within the WRAP Region: 1) the Northwest Subregion, and 2) the Southwest and East Subregion, as defined and delineated in *BPM 102 Reliability Metric Setting*. Each Subregion will have a Day-Ahead Applicable Index Price and a Real-Time Applicable Price Index. The Applicable Prices Index are intended to be a fair representation of the price of energy in a given Subregion and were chosen based on a reasonable assumption that they could be utilized to facilitate an efficient and timely settlement process. If necessary the Applicable Price Index can be changed as describe in *BPM 207 Settlement Process.*

Northwest Subregion

The Day-Ahead Applicable Price Index is the ICE Day-Ahead Mid-Columbia (Mid-C) Index.

The Real-Time Applicable Price Index is the Powerdex Real-Time Mid-C Index.

Southwest and East Subregion

The Day-Ahead Applicable Price Index is the ICE Day-Ahead Palo Verde (PV) Index.

The Real-Time Applicable Price Index is the average of the four 15-minute market (FMM) results for the PV intertie in the California Independent System Operator (CAISO) market (FMM Scheduling Point / Tie Combination Locational Marginal Price; Node: PALOVRDE_ASR-APND; Tie: PVWEST).

4. Settlement Pricing Overview and Components

The pricing for Holdback Requirements and Energy Deployments both start with calculation of the Total Settlement Price. The separate prices for Holdback

Requirements and for Energy Deployments are then derived (at least in part) from the Total Settlement Price. The price for Holdback Requirements is known as the Holdback Settlement Price. The price for Energy Deployments is known as the Energy Declined Settlement Price. The following subsections show the calculation of the Total Settlement Price (Section 4.1), the Holdback Settlement Price (Section 4.2), and the Energy Declined Settlement Price (Section 4.3).

Section 4.4 shows how the pricing for Holdback Requirements is applied to the transaction quantities for Holdback Requirements, and how the pricing for Energy Deployments is applied to the transaction quantities for Energy Deployments.

Section 4.5 shows how to calculate a Make Whole Adjustment, which is applied if the settlement revenue and the estimated value of the Holdback Requirement not deployed (the sum of the Unheld Energy and Declined Energy) is less than the estimated revenues the surplus Participant would have received had it not been subject to a Holdback Requirement. In other words, the Make Whole Adjustment ensures a surplus Participant is compensated in an amount that is no less than the revenue that it could have made had it sold in a Day-Ahead market the full block that was bifurcated to meet the Holdback Requirement. The Make Whole Adjustment includes both pricing elements and quantity elements, since it is triggered by revenue levels, and results in a minimum revenue amount. As the Make Whole Adjustment compensates a surplus Participant for taking on a Holdback Requirement, it is applied to any surplus Participant that takes on a Holdback Requirement, whether or not it also provides an Energy Deployment.

Section 4.6 shows how to allocate the Make Whole Adjustment when there is a single surplus Participant with a Holdback Requirement that is being allocated to multiple deficient Participants. The surplus Participant with the Holdback Requirement should receive a Make Whole Adjustment equal to their maximum total Holdback Requirement. In such cases, the obligation for providing the Make Whole Adjustment will be shared among multiple Particpants.

If and when a Participant voluntarily takes on a Holdback Requirement or Energy Deployment (meaning that the WRAP Tariff does not require the Participant to take on the Holdback Requirement or Energy Deployment), the pricing will be the same as described in BPM 206 for Holdback Requirements and Energy Deployments that are required by the WRAP Tariff.

A daily settlement reflecting Holdback Requirements and Energy Deployments between two Participants will be calculated any time a deficient Participant has requested holdback resulting in a Holdback Requirement for another Participant.

4.1. Total Settlement Price

The Total Settlement Price is based on a Subregion index price, shaped hourly to reflect changes in energy/capacity value from hour to hour, includes a 10% adder, and will not exceed $2,000/MWh or be lower than $0/MWh. The Total Settlement Price is determined in accordance with the following formula:

Total Settlement Price = Maximum of (Minimum of (Hourly Shaping Factor × Day-Ahead Applicable Price Index × 110%, 2000 $/MWh), 0)

where:

Day-Ahead Applicable Price Index is the Day-Ahead peak/off-peak ICE Index price specified above for the Subregion applicable to the location of the delivering entity, applicable to the Day and hour of the energy delivery (assuming that the surplus and deficient Participants are in the same Subregion; if not, see Section 4.8). If donated transmission was used to facilitate holdback, the Day-Ahead Applicable Price Index is the higher of the two subregional Day-Ahead index prices for that portion of the transaction.

And where:

Hourly Shaping Factor for the Operating Day being settled is derived using the System Marginal Energy Component of the Locational Marginal Price, as defined in the CAISO tariff, which price component is the same at all locations in the CAISO energy market as described generally below and more fully in the CAISO Business Practice Manual for Market Instruments, Section P.2 Maximum Import Bid Price Calculation, located here: https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Market%20Instruments. Specifically, the Hourly Shaping Factor uses the most recent High-Priced Day for the current season, defined as a Day in which at least one hour has a System Marginal Energy Cost ("SMEC") greater than $200/MWh, and is calculated as follows:

Hourly Shaping Factor = 1 + {[CAISO Hourly Day-Ahead SMEC – CAISO Average Day-Ahead SMEC (on- or off-peak hours)] / [CAISO Average Day-Ahead SMEC (on- or off-peak hours)]}

The Hourly Shaping Factor is published by the CAISO and can be found on their Open Access Same-Time Information System (OASIS) located here: http://oasis.caiso.com/mrioasis/logon.do using the following navigation: Prices -> Energy Prices -> Hourly Energy Price Shaping Factor.

4.2. Holdback Settlement Price

The Holdback Settlement Price is the Energy Declined Settlement Price subtracted from the Total Settlement Price.

Holdback Settlement Price =
Total Settlement Price - Energy Declined Settlement Price

4.3. Energy Declined Settlement Price

The Energy Declined Settlement Price is the Real-Time Applicable Price Index for the hour. This price is used both as the price paid by the deficient Participant for energy delivered and as the credit the deficient Participant receives towards the Make Whole Adjustment for any of the surplus Participant's Holdback Requirement that was not delivered. It is termed Energy Declined Settlement Price because the calculation of settlement prices is from the perspective of the surplus or selling Participant.

Energy Declined Settlement Price =
Real-Time Applicable Price Index

4.4. Application of Pricing and Quantities for Holdback Requirements and Energy Deployment Transactions

A surplus Participant assigned a Holdback Requirement on a Preschedule Day for any hour of an Operating Day shall be paid the Holdback Settlement Price multiplied by the MW quantity of the Holdback Requirement. A surplus Participant that provides energy to a deficient Participant pursuant to an Energy Deployment shall be paid the Energy Declined Settlement Price multiplied by the MWh of energy provided to the deficient Participant. A surplus Participant assigned a Holdback Requirement also shall be paid, when applicable, a Make Whole Adjustment (see Section 4.5).

A Participant that had a negative Sharing Calculation for any hour of an Operating Day (a deficient Participant) and confirmed to the PA its need for the Holdback Requirement, which was incorporated in the calculation of Holdback Requirements of any surplus Participants for such hour, determined as of the Preschedule Day, shall pay the Holdback Settlement Price multiplied by the MW quantity of such negative Sharing Calculation. Such a deficient Participant shall also pay the Energy Declined Settlement Price multiplied by the MW quantity deployed. In addition, any Participant that had a negative Sharing Calculation and confirmed to the PA its need for the Holdback Requirement, that was incorporated in the calculation of a Holdback Requirement shall contribute to the payment of the Make Whole Adjustment based on its negative Sharing Calculation.

Final Settlement Revenue =

*(Holdback Settlement Price * MW of Holdback Requirement)*
*+ (Energy Declined Settlement Price * MW Energy Deployed)*

4.5. Make Whole Adjustment

The Make Whole Adjustment is a single value calculated, separately for HLH and LLH blocks, on a daily basis applied in the event that the settlement revenue and the estimated value of the Unheld Energy and Declined Energy for a given Day is less than the estimated revenues the surplus Participant would have received had the surplus Participant not been subject to a Holdback Requirement and had sold a Day-Ahead block of energy with a MW value equal to the maximum amount of Holdback Requirement for the hours in the block. If the Holdback Requirement occurs on a HLH the Possible Block Sale Revenue will be calculated using the peak Day-Ahead Applicable Index Price. If the Holdback Requirement occurs on a LLH the Possible Block Sale Revenue will be calculated using the off-peak Day-Ahead Applicable Price Index. The Make Whole Adjustment has a minimum value of 0 and is determined as follows:

Make Whole Adjustment (when applicable) =

Maximum of (Possible Block Sale Revenue
- Final Settlement Revenue
- Real-Time Value of Declined Energy
- Real-Time Value of Unheld Energy, 0)

Where:

$$\textit{Real-Time Value of Declined Energy} = \textit{Declined Energy} \times \textit{Declined Energy Settlement Price}$$

Provided that Declined Energy is only applicable to those hours where there was a positive Holdback Requirement.

And where:

$$\textit{Real-Time Value of Unheld Energy} = (\textit{Maximum Holdback MW in Block of Energy} - \textit{Holdback MW Requested}) \times \textit{Real-Time Applicable Price Index}$$

Provided that the calculation of Unheld Energy is only applicable to those hours where there was not a Holdback Requirement and will be calculated for all remaining hours in the heavy load period if the Holdback Requirement is in the HLHs or for all remaining hours in the light load period if the Holdback Requirement is in the LLHs.

For which purpose:

Real-Time Applicable Index Price is the real-time index price above for the Subregion applicable to the location of the surplus Participant, applicable to the Day and hour of the energy delivery (assuming the surplus and deficient Participants are in the same Subregion; if not, see Section 4.8);

And block of energy means a product having a set number of hours corresponding to either the LLH or HLH where the MW amount is the same in all hours and equal to the maximum amount of the Holdback Requirement.

The Make Whole Adjustment is the maximum of the result of the formula and zero. The Make Whole Adjustment is intended to ensure the surplus Participant is made whole for lost opportunity cost so in the event the result of the calculation is less than or equal to zero there will be no Make Whole Adjustment. The Make Whole Adjustment will be calculated for each Day on a regular cadence.

4.6. Allocation of Holdback Settlement to Multiple Participants

Any Participant having a Holdback Requirement that is allocated to multiple deficient Participants shall have their Possible Block Sale Revenue calculated based on the MW amount in the hour with their largest Holdback Requirement.

To determine how much of the holdback MW used to derive the Possible Block Sale Revenue is attributable to each deficient Participant receiving an allocation of the Holdback Requirement the following methodology will be utilized.

1. Each deficient Participant's maximum allocation of the Holdback Requirement will be organized into tranches where the portion of the total Make Whole Adjustment attributable to each tranche is separately calculated and allocated to the Participants claiming the Holdback Requirement MW in each tranche.

2. A deficient Participant's portion of the Make Whole Adjustment attributable to the MW in each tranche will be allocated based on the following:

    a. On hours where there is a Holdback Requirement those Participants receiving the allocation will be responsible for the settlement associated with that holdback MW amount.

    b. On hours where there is no Holdback Requirement the settlement associated with the MW amount used to calculated the Possible Block Sale Revenue will be split equally amoung those Participants with Holdback Requirement MW in the tranche.

3. The total Make Whole Adjustment is derived by calculating the Make Whole Adjustment attributable to the Holdback Requirement MW in the first tranche, allocating the resulting adjustment value to Participants in the first tranche, increasing the Holdback Requirement MW for those Participants in the second tranche, recalculating the Make Whole Adjustment, and allocating the delta in the Make Whole Adjustment from the previous calculation to each Particpant in the second tranche equally. This continues until there are no more tranches to process.

The Real-Time Value of Declined Energy will be credited to the Participant that declined the energy delivery.

The Real-Time Value of Unheld Energy will be credited to each Participant receiving holdback based on the amount of MW they are obligated for in the calculation of Possible Block Sale Revenue.

The sum of the Make Whole Adjustment obligation allocated to each Participant shall always equal the Make Whole Adjustment that would have been calculated between a single surplus Participant and a single deficient Participant.

An example is provided in the Settlement Pricing Examples document which is posted on the Western Power Pool website.

4.7. Transmission Service

The WRAP Tariff does not separately address pricing for transmission service used in WRAP transactions in which the surplus Participant and deficient Participant are in the same Subregion. Participants are individually responsible for the cost of the transmission to deliver to a point (when such Participant is surplus) or take receipt at a point (when such Participant is deficient). These costs will not be included in the WRAP Tariff defined settlement.

4.8. Settlement Pricing for Subregions

Settlement prices recognize pricing differences among Subregions. Where the surplus Participant and deficient Participant are located in the same Subregion, the Applicable Price Index shall be the price index specified above for that Subregion. Where the surplus Participant and deficient Participant are located in different Subregions, the following components of the settlement price calculation will be calculated using the Applicable Price Index for the Subregion that has the higher index price: (i) Possible Block Sale Revenue; (ii) Total Settlement Price; (iii) Energy Declined Settlement Price; and (iv) Real-Time Value of Unheld Energy. When there are only two Participants there

is no explicit settlement for tranmission as the surplus Participant receives the higher of the two Subregions' Applicable Index Price. If a third Participant is involved by providing transmission service rights between Subregions, the Participant that provided holdback or Energy Deployment shall receive the settlement price of the Subregion from which the Holdback Requirement or Energy Deployment was sourced, and the Participant that provided Subregion to Subregion transmission service rights pursuant to the WRAP Tariff shall receive the difference in the Total Settlement Price between the Subregion where the holdback was sourced and the Subregion where the energy was delivered, or zero, whichever is greater.

WESTERN POWERPOOL

Western Resource Adequacy Program

207 Settlement Process

200 – Operations

Revision History

Manual Number	Version	Description	Revised By	Date
207	0.1	RAPC Glance Version	Maya McNichol	3/12/2024
207	0.2	Public Comment Version	Maya McNichol	3/14/2024
207	0.3	RAPC & PRC Discussion	Maya McNichol	3/19/2024
207	0.4	RAPC Endorsement	Maya McNichol	4/25/2024
207	0.5	Board Approval	Maya McNichol	5/17/2024
207	1.0	Board Approved	Maya McNichol	6/13/2024
207	2.0	Annual BPM Review	Elise Mousseau	12/26/25

Table of Contents

207 Settlement Process

1. Introduction

A Participant with a ~~calculated capacity deficit~~ negative Sharing Calculation result for a given hour on an Operating Day may elect to utilize the Western Power Pool (WPP) Western Resource Adequacy Program (WRAP) to address that capacity deficit. The WRAP Operations Program requires Participants with calculated surplus to hold capacity back and potentially deliver energy to the deficient Participant in bilateral transactions at prices and quantities determined by the Program Administrator and Program Operator as prescribed by the Tariff. Tariff directed transactions are known as Holdback Requirements (see *BPM 204 Holdback Requirement*) and Energy Deployments (see *BPM 205 Energy Deployment*). The Settlement Process Business Practice Manual (BPM 207) provides implementing details and practices regarding the process for settling Holdback Requirements and Energy Deployment transactions. The settlement prices are defined in the Tariff and described in more detail in *BPM 206 Settlement Pricing* and cannot be set aside or modified by Participants absent a change to the Tariff.

1.1. Intended Audience

BPM 207 is intended for WRAP Participants and other interested individuals or entities. BPM 207 is particularly useful for those individuals that are responsible for their Participant organization's implementation of Holdback Requirement and Energy Deployment transactions as well as the settlement of those transactions.

1.2. What You Will Find in This Manual

BPM 207 describes the various settlement processes including, but not limited to, the mechanics of posting settlement information, the process for addressing changes to or errors in published prices, missing data, and the timing for posting settlement information. BPM 207 pairs with *BPM 206 Settlement Pricing* which includes details on the calculation of each component of the settlement price.

BPM 207 does not cover charges that may be assessed by the Program Administrator for not complying with the Tariff obligations., ~~more specifically the Delivery Failure Charge (see *BPM 209 Delivery Failure Charge*) and the FS Deficiency Charge (see *BPM 107 FS Deficiency Charge*) as these are detailed in other BPMs.~~

1.3. Purpose

The purpose of BPM 207 is to provide implementation details of the settlement process for Holdback Requirement and Energy Deployment transactions in the WRAP.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 207 have their meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 207 are defined here, including by reference to another BPM where such term is defined.~~

Declined Energy: As defined in *BPM 206 Settlement Pricing*.

Final Settlement Revenue: As defined in *BPM 206 Settlement Pricing*.

Unheld Energy: As defined in *BPM 206 Settlement Pricing*.

WRAP Settlements Interface Guide: Provides the technical detail necessary for a Participant to access settlement data via the application programming interface (API).

WRAP Settlement Input Data Document: A document provided on the WPP website that describes the inputs into the WRAP settlement price calculations.

2. Background

When a Participant with surplus capacity has a Holdback Requirement for the potential benefit of a deficient Participant, or provides Energy Deployment to benefit a deficient Participant, the pricing of the bilateral transaction between the two Participants is determined by the Tariff and calculated by the Program Administrator per *BPM 206 Settlement Pricing*.

Settlements for all WRAP transactions will be calculated monthly as feasible, allowing for counterparty settlement that aligns with generally accepted settlement practices in the bilateral market. Price components and Final Settlement Revenue by Participant will be calculated by the Program Administrator and will be made available to any Participant having a Holdback Requirement or Energy Delivery transaction in a given month along with the necessary information to create an invoice and verify and validate the calculation of the settlement quantities and amounts. The selling Participant is responsible for invoicing the buying Participant per the selling Participant's internal processes.

3. What Settlement Information is Posted

The Total Settlement Price (see *BPM 206 Settlement Pricing*) for each hour of the Binding Season will be made publicly available and also be provided to Participants, including hours where there is not an Operations Program Holdback Requirement or Energy Deployment. For any month where there is a Holdback Requirement or Energy Deployment, the following information will be made available to the Participants that

are party to the transaction: counterparty (buying or selling Participant), month of transaction, and the Final Settlement Revenue associated with the transaction. Additionally, the Program Administrator will provide ~~a~~ settlement ~~document~~ information outlining the daily settlement inputs, intermediate calculations and outputs, including the Make Whole Adjustment, so each Participant party to a transaction may validate and verify the Final Settlement Revenue and any Make Whole Adjustment (when applicable) as defined in *BPM 206 Settlement Pricing.*

WPP will ensure that index pricing is shared consistent with the terms and conditions specified in WPP's agreement with the vendor providing the pricing data. This may mean that certain inputs to the settlement calculation may not be available to those Participants that do not already have their own access to such information.

Table 1. Settlement Data Posting

How it is posted	Data Type
Posted publicly	Total Settlement Price for each hour of the Binding Season by Subregion
Posted for parties to the transaction	Counterparty Month of Transaction Final Settlement Revenue ($) Holdback Requirement (MW) Energy Deployment (MW) Declined Energy (MW) Unheld Energy (MW)

4. How Settlement Information is Accessed

Information necessary for Participants to settle WRAP-related transactions are available via the API. More information on implementation and use of the API, as well as details on specific data that are made available, can be found in the WRAP Settlements Interface Guide posted to the WPP website.

5. Timeline

The monthly settlement prices and accompanying details (such as counterparty and month) will be calculated and posted no later than seven business days following the Program Administrator's receipt of all the required input data. A list of the necessary input data can be found in the WRAP Settlement Input Data Document posted to the WPP website. WPP will send an email to a Participant list when all input data has been received by WPP and when the calculated prices are posted. A Participant has 90 Days

after the prices are posted to invoke the Dispute Resolution Procedure (Section 6), and, absent a change to an input under Section 5.2 of this BPM 207, all settlement pricing will be deemed final upon expiration of the 90-Day period or per the outcome of any Dispute Resolution Procedure initiated under the Tariff.

5.1. Unavailability of External Input Data

If the Applicable Price Index data and/or Hourly Shaping Factor data necessary to calculate settlement for a month (in which there is a Holdback Requirement or Energy Deployment) is not available 60 Days after the last Day of the settlement month, the Program Administrator will assess whether alternative data should be utilized. Use of an alternative Applicable Price Index or Hourly Shaping Factor is governed by the details in *BPM 206 Settlement Pricing*.

5.2. Changes to Inputs after Settlement Values have been Calculated

WPP and/or a Participant may identify changes to the settlement calculation inputs after the settlement prices for a month have been posted. If WPP identifies any changes or if a Participant identifies a change and works with WPP to supply the updated information, WPP will post all information identified in Section 3 with the updated settlement calculation inputs. If the changes to the settlement calculation inputs results in a greater than 5% change in the daily settlement after the settlement has been posted, a Participant that is a party to the transaction may submit an email request to the Program Administrator at wrapsettlements@westernpowerpool.org to recalculate those settlements for a given month. Email notification must be received by the Program Administrator no later than 90 Days after the settlement for the month in question was posted and include the date(s) of the transaction(s), counterparty(ies), and identification of which input was updated. Once settlements for the given month have been recalculated a notification will be provided to all Participants within five Days. A Participant has 90 Days after the recalculated prices are posted to invoke the Dispute Resolution Procedure (Section 6), and all settlements will be deemed final upon expiration of the 90-day period or per the outcome of any Dispute Resolution Process initiated under the Tariff.

6. Dispute Resolution Procedure

Nothing in BPM 207 limits the ability of a Participant that believes a settlement price has been calculated in error from raising such concerns with the Program Administrator staff or invoking the Tariff Dispute Resolution Procedure.

7. Relationship to Existing Enabling Agreements

Participants may elect to enter into WRAP Operations Program transactions under existing enabling agreements such as those provided by WSPP, Inc., the International

Swaps and Derivatives Association, or any other such agreement deemed acceptable by both parties to the transaction. At no time may the terms and conditions specified in any enabling agreement that is used to effect a WRAP Operations Program transaction supersede or contradict any portion of the Tariff with respect to that WRAP Operations Program transaction. Each counterparty to a bilateral transaction initiated to fulfill a Tariff-governed transaction must confirm that pricing will be as defined in Section 21 Operations Program Settlements and damages will be as defined in Section 20 Failure to Deliver Energy Deployments of the Tariff or any associated Business Practice Manuals.

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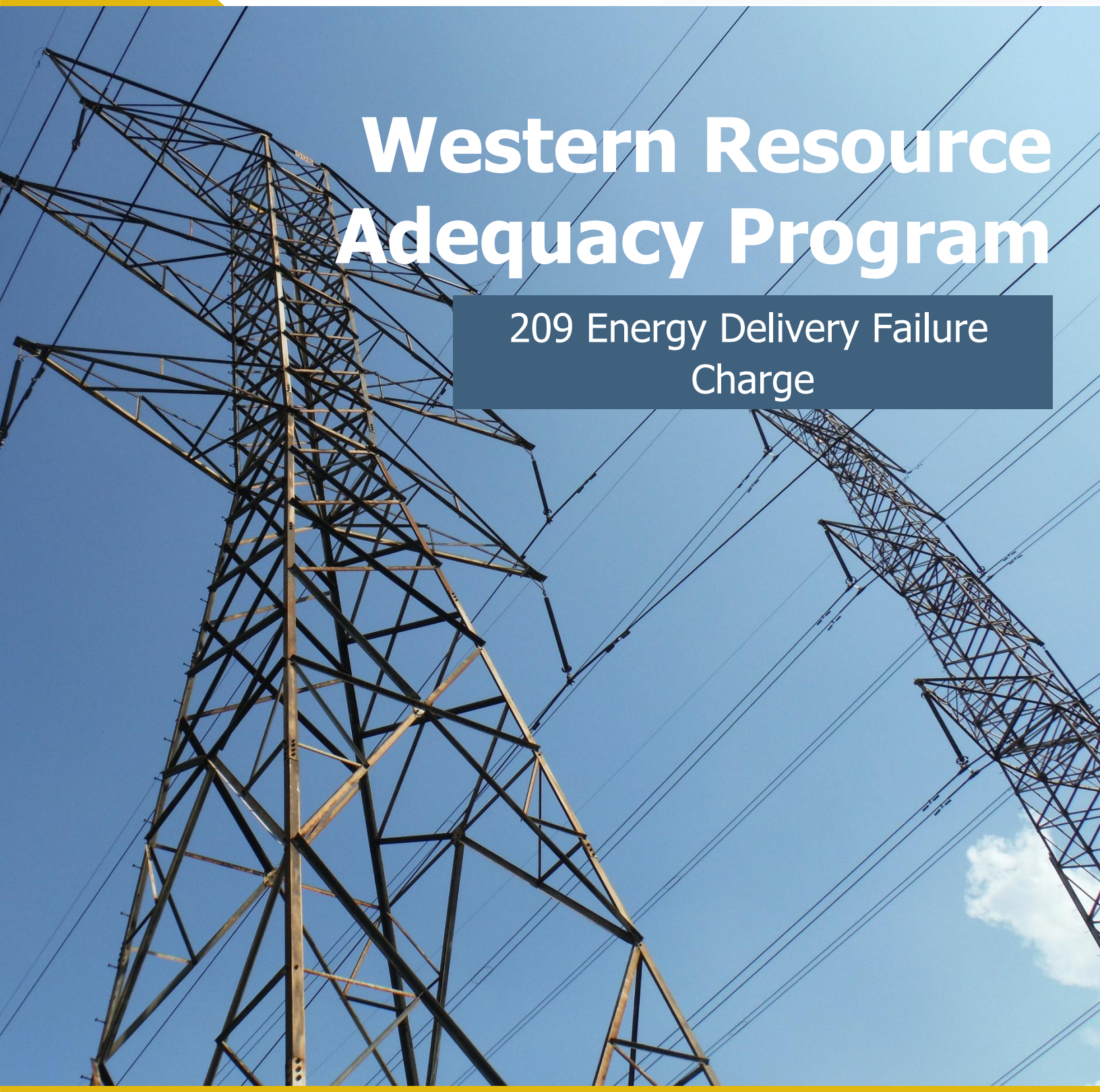

Western Resource Adequacy Program

209 Energy Delivery Failure Charge

200 – Operations

Manual Number	Version	Description	Revised By	Date
209	0.1	RAPC Glance Version	Ryan Roy	1/10/2024
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209	A0.2	Public Comment Version	Ryan Roy	4/3/2024
209	A0.3	RAPC & PRC Discussion	Ryan Roy	5/2/2024
209	A0.4	RAPC Endorsement	Ryan Roy	5/9/2024
209	A0.5	Board Consideration	Ryan Roy	5/17/2024
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209	1.0	Board Approved	Rebecca Sexton	9/19/2024
209	2.0	Annual BPM Review	Elise Mousseau	12/26/25

Revision History

Table of Contents

209 Delivery Failure Charge

1. Introduction

In the Operations Program, Participants that fail to deliver their assigned Energy Deployment and do not secure a waiver for that failure will pay a Delivery Failure Charge. The Delivery Failure Charge Business Practice Manual (BPM 209) provides implementing details and practices for the calculation of the Delivery Failure Charge, the process and considerations for obtaining a Waiver, limits on the maximum amount of such charge, and the allocation of revenues received by the Western Power Pool (WPP) from payment of such charges.

1.1. Intended Audience

BPM 209 is intended for WPP Western Resource Adequacy Program (WRAP) Participants and other interested individuals or entities. BPM 209 will be particularly useful for those individuals that are responsible for, and support, participation in the Operations Program on a day-to-day basis.

1.2. What Will You Find in This Manual?

BPM 209 includes information on the Delivery Failure Charge calculations, evaluation of delivery failures, the Waiver process, and allocation of revenues received by WPP from payment of such charges.

1.3. Purpose

To provide implementing details and practices relative to the Delivery Failure Charge and process and considerations for Waiver of the Energy Deployment Obligation.

1.4. Definitions

All capitalized terms that are not otherwise defined in this BPM 209 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here:~~

Charge Rate: The rate, which can vary based on frequency of Energy Delivery Failures and impact on the deficit Participant intended to receive the Energy Deployment, applied to the Participant's Energy Delivery Failure in MWh, to produce the Delivery Failure Charge.

Covered Delivery Failure: A Participant's failure to provide an assigned Energy Deployment in full, when the MW amount of Energy Deployment the Participant failed to deliver is entirely covered by other Participants.

Non-Covered Delivery Failure: A Participant's failure to provide an assigned Energy Deployment in full when the MW amount of Energy Deployment the Participant failed to deliver is not entirely covered by other Participants.

Presumptive Waiver for Uncertainty Exceedances: A Participant will be eligible for a presumptive waiver of an Energy Deployment obligation when certain circumstances related to uncertainty of operating conditions are realized after Holdback obligations are determined in Operations Program timeline.

Waiver: Waiver, as requested by a Participant, of an Energy Deployment obligation of such Participant, upon determination by WPP that the Participant has a valid justification for its Energy Delivery Failure and such waiver is warranted.

2. Background

The WRAP is a regional resource adequacy program in which Participants demonstrate, in advance of a defined season when resources may need to be deployed, that they have sufficient resources to meet their expected peak loads and a reserve margin. The WRAP imposes standards and requirements related to such matters as the resources that qualify to meet resource adequacy objectives, the calculation of peak loads, and the required minimum reserve margin. Under the WRAP, Participants with surplus resources are required to assist Participants that are resource-deficient in certain circumstances, and if a surplus Participant fails to make required energy deliveries to a deficient Participant, the surplus Participant is subject to a Delivery Failure Charge for such delivery failure.

3. Notification of Anticipated Delivery Failure

A Participant anticipating an Energy Delivery Failure should provide notice as soon as practicable after becoming aware of the anticipated failure. To help ensure timely and effective notice, the Participant will:

1. Notify the affected Participant via phone call of the anticipated Energy Delivery Failure, including the affected hour(s), the anticipated MW quantities of the non-delivery, the adjusted MW delivery quantity after taking into account the expected non-delivery, and the reason for the non-delivery;
2. Notify the Program Operator via phone call to the Program Operator WRAP coordinator desk of the anticipated Energy Delivery Failure, including the name of the Participant that was to receive the Energy Deployment, the affected hour(s), the anticipated MW quantities of the non-delivery, the adjusted MW delivery quantity after taking into account the expected non-delivery, and the reason for the non-delivery; and

3. Notify the Program Administrator via e-mail of the anticipated Energy Delivery Failure, including the affected hour(s), the anticipated MW quantities of the non-delivery, the adjusted MW delivery quantity after taking into account the expected non-delivery, and the reason for the non-delivery.

A Participant's provision of notice as outlined above may be considered in a request for a Waiver (see Section 7), but notification is not in and of itself sufficient to receive a Waiver.

4. Calculation of Delivery Failure Charge

Participants that fail to deliver the entirety or a portion of their assigned MW amount of Energy Deployment and do not obtain a Waiver (see Section 7) for that failure will pay a Delivery Failure Charge. The Delivery Failure Charge for each hour is the Charge Rate applicable for the subject hour multiplied by the MWh amount that was not delivered.

The Charge Rate applicable to the hour of the Delivery Failure will be determined using the higher of the Day-Ahead Price and Real-Time Price, relative to the Operating hour in which the Energy Delivery Failure occurred, from the Applicable Price Index for the Subregion applicable to the location of the delivering entity (see *BPM 206 Settlement Pricing* for more information).

The Charge Rate also includes a multiplier, known as the Delivery Failure Factor; the Charge Rate is higher if the Energy Delivery Failure is a Non-Covered Delivery Failure than if other Participants provide the non-delivered energy in a Covered Delivery Failure. The Charge Rates increase if a Participant has additional Energy Delivery Failure(s) in a Cumulative Delivery Failure Period. The varying Charge Rates are shown in Table 1.

Table 1. Charge Rates and Delivery Failure Factors

If the Participant's Energy Delivery Failure is a Covered Delivery Failure, the Charge Rates are as follows:	
First Energy Delivery Failure in a Cumulative Delivery Failure Period	5 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.
Second Energy Delivery Failure in a Cumulative Delivery Failure Period	10 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.
Third or more Energy Delivery Failure in a Cumulative Delivery Failure Period	20 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.

If the Participant's Energy Delivery Failure is a Non-Covered Energy Delivery Failure, the Charge Rates are as follows:	
First Energy Delivery Failure in a Cumulative Delivery Failure Period	25 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.
Second or more Energy Delivery Failure in a Cumulative Delivery Failure Period (regardless of whether the first Energy Delivery Failure was Covered or Non-Covered)	50 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.

Energy Delivery Failures occurring in multiple hours on the same Day are counted as one Energy Delivery Failure for purposes of calculating the Delivery Failure Charges. The "50 times" Delivery Failure Factor in Table 1 applies regardless of whether the prior Energy Delivery Failures were Covered Delivery Failures or Non-Covered Delivery Failures: if a Participant had one Covered Delivery Failure and paid the 5 times higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index, and then had one Non-Covered Energy Delivery Failure, that Non-Covered Energy Delivery Failure would be charged 50 times the higher of the Day-Ahead Price or Real-Time Price for the subject hour from the Applicable Price Index.

5. Dollar Limit on Delivery Failure Charges During a Forward Showing Year

The total Delivery Failure Charges assessed on a Participant during a Forward Showing Year, regardless of application of the Delivery Failure Factor, will not exceed the dollar amount that would have been assessed cumulatively as Forward Showing Deficiency Charges if the Participant failed the Forward Showing by the MW amount it failed to deliver in the Operations Program. The dollar limit is a function of the Participant's largest (MW) Energy Delivery Failure(s) exhibited in each month within a Forward Showing Year. On a rolling Monthly basis during a Forward Showing year, the Program Administrator will calculate a Participant's dollar limit on Delivery Failure Charges by summing:

- The equivalent Forward Showing Monthly Deficiency Charge for the largest Energy Delivery Failure so far in the Forward Showing Year (see *BPM 107 Forward Showing Deficiency Charges)*; and
- The equivalent Forward Showing Monthly Deficiency Charge for any Energy Delivery Failures in another month (or months) in the Forward Showing Year

(using the largest Energy Delivery Failure in such month(s) [see *BPM 107 Forward Showing Deficiency Charges*]).

If a Participant meets the cumulative monthly dollar limit for Energy Delivery Charges during a Forward Showing Year, the Participant will not be required to pay further Energy Delivery Failure Charges until the dollar limit is increased due to any subsequent Energy Delivery Failures during that Forward Showing Year.

6. Allocation of Revenues from Payment of Delivery Failure Charges

To the extent WPP collects payment of Delivery Failure Charges, the revenues from such payments will be applied in one of two ways. If the Energy Delivery Failure that resulted in the assessment of the Delivery Failure Charge was a Covered Delivery Failure, then WPP will apply the revenue from collection of such charge to reduce WPP costs that are recovered under the WRAP Administration Charge in Schedule 1 of the Tariff. Alternatively, if the Energy Delivery Failure that resulted in the assessment of the Delivery Failure Charge was a Non-Covered Delivery Failure, then WPP will provide the revenue from collection of such charge to the Participant that had an unserved deficit as a consequence of the Energy Delivery Failure. WPP will distribute this revenue only after the deadline for requesting a Waiver of an Energy Deployment obligation has passed and no Waiver has been requested; or, alternatively, after a timely request for Waiver has been made and all proceedings related to that Waiver (including appeals) have been exhausted and WPP's determination regarding the request for Waiver is final.

7. Waiver of an Energy Deployment Obligation

7.1. Process for Requesting a Waiver

A Participant may seek a Waiver of an Energy Deployment obligation no later than 30 Days after the Participant has had an Energy Delivery Failure. To make such a request, the Participant will submit the request to the Program Administrator in the form outlined on the WPP website, and include the relevant circumstances and the Participant's justification for the Energy Delivery Failure, with appropriate supporting information. The Participant should address in the Waiver request if and when the Participant knew in advance of the Energy Delivery Failure, and what efforts the Participant took to notify any affected deficit Participant of the anticipated Energy Delivery Failure, the Program Operator, and the Program Administrator, in advance of such Energy Delivery Failure. A Waiver request does not stay or extend the Participant's obligation to timely pay any WPP invoice that includes a Delivery Failure Charge, but the Participant may designate such payment as subject to the outcome of its Waiver request.

7.2. Program Administrator Review of Waiver Requests

The Program Administrator will review all Waiver requests and will determine whether to grant the Waiver, taking into account the circumstances and all relevant information, including the Participant's justification for the Energy Delivery Failure and whether the Participant knew in advance, or reasonably should have known in advance, of an Energy Delivery Failure, and what efforts the Participant took to notify any affected Participant, The Program Operator, and the Program Administrator in advance of such Energy Delivery Failure. The Program Administrator may request any additional information it deems necessary to act on the Waiver request, and the Participant will timely respond to such requests. Additionally, in order to validate the Sharing Requirement associated with the period of the Energy Delivery Failure, the Program Administrator may request additional information associated with the Sharing Requirement inputs from all Participants during the period the Delivery Failure occurred.

The Program Administrator will endeavor to act on all Waiver requests within 14 Days of the later of the date of the Program Administrator's receipt of the request, or the date of the Program Administrator's receipt of all additional information from the Participant that the Program Administrator's determined necessary to act on the request. The Program Administrator shall report to all Participants on its disposition of all Waiver requests. To the extent the Program Administrator grants a Waiver that requires revision of a previously paid Delivery Failure Charge, the Program Administrator will issue a correcting invoice, and make any necessary credits to the Participant's account, including any interest earned.

7.3. Non-Exhaustive~~clusive~~ List of Potential Waiver Justifications

Each Waiver request will be evaluated on the basis of all relevant circumstances.

A Waiver may be valid if any of the circumstances in the non-exhaustive list below arise that necessitate a Participant execute load management procedures to prevent firm load interruption and/or maintain minimum Contingency Reserve requirements:

1. Loss or derate of a generation facility; or
2. Loss or derate of a transmission facility; or
3. WECC unscheduled flow mitigation; or
4. Pre-Schedule Day forecasts for load and/or VER performance (see *BPM 202 Sharing Calculation Inputs* for forecasting methodology) underestimated load or overestimated VER performance (both relative to the Operating Day) to the extent that the Uncertainty Factor used in the Sharing Calculation for the period of the Delivery Failure (see *BPM 203*) was insufficient to cover such variances.

A Waiver may be valid if NERC priority 6 (network integration transmission service [NITS] from resources not designated as network resources or conditional firm long-term firm point-to-point [PTP]) or NERC priority 7 (firm PTP transmission service or NITS) being utilized to deliver an Energy Deployment experienced a loss or derate or was curtailed to mitigate WECC unscheduled flow.

A Waiver may be valid if a Participant in a region without a central hub is unable to reserve transmission that was available on OASIS prior to the WRAP's established deadline for the Participant to provide the points at which it can receive or deliver holdback in the Operations Program but that was not available after the Participant received a binding allocation of holdback (see *BPM 201 Operations Timeline* ~~for additional information on timelines for the Operations Program~~).

Waivers will not be granted on the basis of insufficient supply in the circumstances where a Participant has made additional sales, or taken resource outages that are not the result of a Forced Outage as defined in *BPM 202 Participant Sharing Calculation Inputs,* beyond those supported by capacity surplus to its FS Capacity Requirement.

7.4. Presumptive Waiver for Uncertainty Exceedances

A Participant will be eligible for a presumptive Waiver of an Energy Deployment Obligation for an applicable hour if and only to the extent that:

1. The Participant provides an attestation (see Appendix A – Presumptive Waiver for Uncertainty Exceedances Attestation) from a senior executive or other official with authority to bind the Participant both legally and financially to an expense of the magnitude of the Delivery Failure Charge as defined by the Tariff, attesting that:

    i. The official has authority to bind the Participant both legally and financially to an expense of the magnitude of the Delivery Failure Charge as defined in the Western Resource Adequacy Program Tariff; and

    ii. The Participant had insufficient supply available for a given hour to be able to meet both its Holdback Requirement of Energy Deployment and its other firm obligations (including load, contingency reserves, forward commitments and/or other Balancing Authority, Transmission Provider or utility obligations); and

    iii. The combination of the Participant's deviations in load and deviations in resource availability and/or performance resulted in a net shortfall amount that exceeded the Uncertainty Factor; and

    iv. The net volume of transactions made by the Participant after the WRAP Holdback Requirement was set and sourced from its Qualifying Resources

reported in its FS Submittal (forward sales beyond those supported by capacity surplus to its FS Capacity Requirement and/or new preschedule, day-ahead or real-time sales that are not WRAP Holdback Requirements of Energy Deployments) was not a net sales position for the applicable hour.

The Participant provides supporting documentation requested by the Program Administrator for validation of the next shortfall and contracting behavior, including but not limited to a detailed calculation of the net shortfall. A Presumptive Waiver for Uncertainty Exceedances shall only apply in these specific limited circumstances and shall be applicable only to the extent of the Energy Delivery Failure caused by the circumstances identified above; any unmet Energy Deployment Obligation for the applicable hour in excess of the amount attributable to the circumstances identified above will not be eligible for a Presumptive Waiver for Uncertainty Exceedances and will constitute an Energy Delivery Failure.

7.5. Appeal of Denial of a Waiver Request

If a Participant submits a request for Waiver that the Program Administrator denies in whole or in part, the Participant may appeal such denial to the Board of Directors. To make such an appeal, the Participant should submit notice of the appeal in the form outlined on the WPP website, including all information the Participant considers necessary to support its view that the Program Administrator erred in denying the requested Waiver. Any such appeal must be submitted no later than 14 Days after WPP's denial of the Waiver request. The Board may request that the Participant provide such additional information as the Board considers necessary for its action on the appeal, or may collect additional information related to Sharing Calculation inputs during the time of the Energy Delivery Failure from other Participants in order to validate the Sharing Calculation results. The timing of the Board's action on an appeal is in the Board's discretion.

7.6. Presumptive Waiver Afforded Bonneville Power Administration (BPA) In Certain Circumstances

The Operations Program may at times obligate BPA, as a WRAP Participant, to "hold back" federal power that BPA has determined to be surplus (as defined by BPA's governing statutes), but does not address the circumstance where BPA determines it must provide that surplus to a preference customer before supplying to a non-preference WRAP Participant.

Therefore, to enable BPA to comply with its statutory preference obligations while participating in the Operations Program, a Waiver is presumptively established if:

(1) BPA determines it is unable to meet a WRAP holdback allocation or delivery obligation under the WRAP Tariff Operations Program because of BPA's obligation to give preference and priority in disposing of federal power; and

(2) BPA provides assurance to the Board of Directors in an attestation that BPA would have violated its obligation to give preference if it had met its WRAP obligation. BPA will attest to the following limiting factors:

a. BPA could not deliver the full amount of its WRAP-required Energy Deployment without violating BPA's obligation to give preference and priority when disposing federal power, including a summary of the facts that resulted in the conflict with BPA's WRAP obligations and BPA's preference obligations;

b. To avoid conflict, BPA relied to the extent practicable on its available power supply not committed to WRAP. However, BPA forecasted, based on best available information and data at the time of the holdback operational period, an inability to use operational flexibility to produce additional surplus federal power given non-power constraints and environmental obligations during the holdback operational period or without significantly altering operations in a manner that would jeopardize BPA's ability to meet future firm load obligations (provided that, BPA took reasonable actions, including market purchases, to mitigate potential jeopardy);

c. BPA was unable to acquire additional power, either in the market or through WRAP, during the holdback operational period in the amount requested by WPP; and

d. BPA notified WPP of the expected Energy Delivery Failure as soon as practicable after becoming aware of the anticipated failure.

8. Possible Expulsion for Repeated Energy Delivery Failures

A Participant that has a third or subsequent Covered Delivery Failure, or has a second or subsequent Non-Covered Delivery Failure (regardless of whether the prior Energy Delivery Failures were Non-Covered Delivery Failures), will be reviewed for possible expulsion from the WRAP (per section 9.2.4 of the WRAPA).

Appendix A – Presumptive Waiver for Uncertainty Exceedances Attestation

I, the undersigned, who as [title] serve as a senior executive or other official of [Participant], hereby attest:

i. I have authority to bind the Participant both legally and financially to an expense of the magnitude of the Delivery Failure Charge as defined in the Western Resource Adequacy Program Tariff; and

ii. The [Participant] had insufficient supply available for a given hour to be able to meet both its Holdback Requirement of Energy Deployment and its other firm obligations (including load, contingency reserves, forward commitments and/or other Balancing Authority, Transmission Provider or utility obligations); and

iii. The combination of [Participant]'s deviations in load and deviations in resource availability and/or performance resulted in a net shortfall amount that exceeded the Uncertainty Factor; and

iv. The net volume of transactions made by [Participant] after the WRAP Holdback Requirement was set and sourced from its Qualifying Resources reported in its FS Submittal (forward sales beyond those supported by capacity surplus to its FS Capacity Requirement and/or new preschedule, day-ahead or real-time sales that are not WRAP Holdback Requirements of Energy Deployments) is not a net sales position for the applicable hour.

WESTERN POWERPOOL

Western Resource Adequacy Program

210 Binding and Non-Binding Participation in Operations Program

200 – Operations

Revision History

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210	0.1	RAPC Glance	Ryan Roy	9/13/2023
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210	0.5	Board Consideration	Ryan Roy	11/10/2023
210	1.0	Board Approved	Ryan Roy	12/6/2023
210	1.1	2024-NTFP-2 Edits	Katie Gregor	1/27/25
210	2.0	Annual BPM Review	Elise Mousseau	12/26/25

210 Binding and Non-Binding Participation in Operations Program

1. Introduction

The Operations Program of the Western Resource Adequacy Program (WRAP) provides for a four-year Transition Period, commencing in Summer 2025 and ending in Winter 2028-2029. The seasons between and inclusive of Summer 2025 and Winter 2026-2027 will be Non-Binding for all Participants. From Winter 2027-2028 all Participants will be Binding (excepting any Critical Mass provisions) and subject to certain charges for failure to meet or cure compliance obligations associated with Binding participation in the WRAP; however, during the Transition Period such charges may be reduced in certain limited circumstances. The Transition Period also provides Participants the option of Binding participation one season earlier in Summer 2027, so this season may have a mixture of Binding and Non-Binding Participants. This Binding and Non-Binding Participation in Operations Program Business Practice Manual (BPM 210) provides implementing details and practices relevant to the Operatons Program during the Transition Period and for Non-Binding Participants. Implementing details and practices relevant to the Forward Showing Program during the Transition Period are detailed separately in *BPM 109 Forward Showing Transition Period*. Both during and after the Transition Period, if a sugregion fails to meet a Critical Mass of participation, the Participants of such Subregion may elect to participate as Non-Binding Participants. In such circumstances, the following BPM 210 also describes details and practices relevant to the Operatons Program when some Participants are Binding Participants and some Participants are Non-Binding Participants.

1.1. Intended Audience

BPM 210 is intended for WRAP Participants and other interested individuals or entities. BPM 210 is particularly useful for those individuals that are responsible for, and support, participation in the Operations Program on a day-to-day basis or are interested in understanding the Operations Program impacts of the Forward Showing transition provisions provided for in *BPM 109 Forward Showing Transition Period*.

1.2. What Will You Find in This Manual?

This document includes sections outlining practices and implementing details relevant to the Operations Program when some Participants are Binding Participants and some Participants are Non-Binding Participants, such as during the Summer 2027 or when a Subregion fails to meet Critical Mass, including the operational impacts of utilizing transition provisions in the Forward Showing Program.

1.3. Purpose

To provide an overview of the relevant activities for the Operations Program that may impact business processes of current or potential Participants.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 210 have their meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here:~~

Joint Contract Accreditation Form, or JCAF: As defined in *BPM 106 Qualifying Contracts*

No-JCAF Option: As defined in *BPM 109 Forward Showing Transition Period.*

Priority Tier: Comparative rankings used to determine access to limited available aggregated Holdback Requirements and limited available voluntarily offered holdback, in relation to Sharing Events during the Transition Period.

Tier One: The first Priority Tier, as described in BPM 210 Section 4

Tier Two: The second Priority Tier, as described in BPM 210 Section 4Table 1.

Table 1**Transition Binding Season:** As defined in *BPM 109 Forward Showing Transition Period.*

Uncertainty Factor: As defined in *BPM 203 Program Sharing Calculation Inputs.*

2. Background

The WRAP is a regional resource adequacy program in which Participants demonstrate, in advance of a defined season, that they have sufficient resources to meet their expected peak loads and a reserve margin. The WRAP imposes standards and requirements related to such matters as the resources that qualify to meet resource adequacy objectives, the calculation of peak loads, and the required minimum reserve margin. The WRAP provides for imposition of significant charges on Participants that do not show in advance sufficient resources to meet their FS Capacity Requirement. In addition, under the WRAP, Participants with resources surplus to their needs in the operating time horizon ~~are~~ may be subject to requirements in certain circumstances during the Binding Season to assist Participants that are resource-deficient in the operating time horizon, and if a surplus Participant fails to make required energy deliveries to a deficient Participant, the surplus Participant is subject to significant charges for such delivery failure. Recognizing that not all Participants may have made all necessary arrangements and implemented all necessary business processes at the program's outset to secure WRAP-Qualifying Resources, meet the various WRAP obligations, and avoid imposition of these significant charges, the WRAP includes a four-year Transition Period. ~~The Transition Period and its associated rules allow each Participant to select which specific Binding Season during the Transition Period (prior~~

~~to Winter 2027-2028 when all Particpants will be Binding) the Participant will first become subject to these obligations.~~ The Transition Period rules also provide the possibility of Discounted Deficiency Charges in certain specific circumstances designed to recognize that some Participants may still be in the process of securing all resources needed to ensure compliance with WRAP requirements.

Additionally, after the Transition Period, if a Subregion fails to meet a Critical Mass of participation, the Participants of such Subregion may elect to participate as Non-Binding Participants. In such circumstances, the following BPM 210 also describes details and practices relevant to the Operations Program when some Participants are Binding Participants and some Participants are Non-Binding Participants. More information on Critical Mass can be found in Section 7 of *BPM 107 Forward Showing Deficiency Charge*.

3. Reduction in Sharing Calculation

Under the Operations Program, the Program Administrator implements a Sharing Calculation to identify any hour in which any Participant is forecasted to have a capacity deficiency relative to the Participant's Forward Showing Capacity Requirement (known as a "Sharing Event"). The Sharing Calculation also identifies each Participant that is forecasted to have surplus capacity relative to the Participant's Forward Showing Capacity Requirement during any Sharing Event, and the amount of such surplus capacity. This calculation takes into account changes in a Participant's resource availability, resource performance, forecasted load, and Contingency Reserves relative to the Forward Showing Capacity Requirement, plus an Uncertainty Factor.

The amount of capacity shown to be available in the Sharing Calculation of any Participant that was found under the Forward Showing ~~Program~~ to have a Monthly Capacity Deficiency shall be reduced by the MW quantity of such Monthly Capacity Deficiency, but only if the Participant paid a FS Deficiency Charge for such Monthly Capacity Deficiency (see *BPM 107 Forward Showing Deficiency Charge~~ies~~ ~~for additional information~~*). This reduction in Sharing Calculation effectively reduces the quantity of capacity the Participant is expected to have during a Sharing Event, given that the Participant has already paid a FS Deficiency Charge for this increment of capacity for a given month. ~~As a simple~~ For example, if a Participant had a FS Capacity Requirement ~~(i.e., the Participant's P50 load MW quantity and FSPRM MW quantity) in June 2030~~ of 100 MW in a month but only showed 90 MW in their FS Submittal for ~~June~~that month and paid the FS Deficiency Charge on the remaining 10 MW, then the Participant's P50 × (1 + FSPRM) term in their Sharing Calculation would be 90 MW in that month~~during June 2030~~.

A Participant that pays a FS Deficiency Charge or avoids a FS Deficiency Charge by exercising a No-JCAF Option receives the same reduction in its Sharing Calculation equal to

the MW quantity of its Monthly Capacity Deficiency even if that Participant's FS Deficiency Charge was reduced during the Transition Period due to either or both of an Excused Transition Deficit (ETD) or exercising of the No-JCAF Option, as more fully described in ~~the Tariff and in~~ *BPM 109 Forward Showing Transition Period*.

4. Priority Tier Access ~~of Access~~ When Available Capacity is Limited

~~For any Sharing Event during a S~~season with both Binding and Non-Binding participation~~,~~ ~~when there is insufficient capacity available to satisfy deficiencies of all Participants with negative Sharing Calculation results~~, available capacity will be allocated to Participants who ~~are participating as Binding Participants in the relevant season. In this case, capacity from Holdback Requirements is available only to Binding Participants. The rules set forth in the Tariff and *BPM 204 Holdback Requirement* for allocation of Holdback Capacity to Participants with negative Sharing Calculation results (those that have confirmed the need for assistance under Tariff sections 20.2.1 or 20.4.2, as applicable) apply.~~For any Sharing Event during a Season with both Binding and Non-Binding participation, available Holdback Capacity from the Sharing Calculation results will be allocated to Binding Participants in the relevant season (see BPM 204 Holdback Requirement). Non-Binding Non-Binding Participants will not receive Holdback Capacity from Sharing Calculation results.

A Participant may voluntarily offer additional capacity into the WRAP Operations Program for allocation to Participants with negative Sharing Calculation results. This is called Voluntary Holdback, and is described more fully in *BPM 204 Holdback Requirement*. To the extent that any Voluntary Holdback has been offered, Participants with negative Sharing Calculation results will be provided access to Voluntary Holdback based on the Priority Tiers of the Participants needing assistance in any case where the needed assistance is less than the available Voluntary Holdback offered.

The first Priority Tier ("Tier One") will be given to any Binding Participant in the relevant Binding Season. ~~any Participant who is participating in the relevant Binding Season as a Binding Participant.~~ The second priority ("Tier Two") will be given to Non-Binding Participants in the relevant Binding Season.~~The second priority will be given to Participants for which the relevant Binding Season is a Non-Binding Season ("Tier Two").~~

Non-Binding Participants electing to offer Voluntary Holdback will not be subject to Delivery Failure Charges for failure to deliver energy to the Participant with a negative Sharing Calculation result but are strongly encouraged to fulfill those commitments, and to consider their ability to fulfill those commitments before making the voluntary offer.

~~Note that Non-Binding Participants do not pay FS Deficiency Charges during their Non-Binding Seasons, even if they might otherwise be calculated to have a Monthly Capacity Deficiency.~~

~~The Participants in each Priority Tier, their rights, and their responsibilities, are also summarized in Table 1 below.~~

~~5. Priority Tier Summary~~

The Participants in each Priority Tier, their rights, and their responsibilities, are summarized in Table 1~~Table 1~~ below. Table 1~~Table 1~~ shows, for clarity, a third Priority Tier, which simply recognizes that entities that are not Participants have no rights to WRAP Holdback Requirements or Voluntary Holdback. Participants may offer capacity or energy to non-Participants outside the WRAP, consistent with satisfying their obligations under the Tariff. More information on Holdback Requirement and Voluntary Holdback can be found in *BPM 204 Holdback Requirement*.

Table 1~~1~~. Priority of Access to Holdback Requirements and Voluntary Holdback

Tier	Who is in it?	What do they get?	Obligations to WRAP
Tier One	Binding Participants	Holdback Requirements from other Participants, as assigned per the Tariff. Access to Voluntary Holdback offered by other Participants, as allocated among Participants with negative Sharing Calculation Results who confirmed a need for assistance for the given hour.	Subject to binding WRAP obligations for FS and Operations (including receiving Holdback Requirements as a result of a positive Sharing Calculation result or an offer of Voluntary Holdback). May provide Voluntary Holdback.
Tier Two	Non-Binding Participants	Access to Voluntary Holdback offered by other Participants, as allocated among Participants with negative Sharing Calculation Results who confirmed a need for assistance for the given hour and not otherwise allocated to Tier One Participants.	Not subject to binding WRAP obligations for Operations, including the Holdback Requirement as a result of the Sharing Calculation. May receive a Holdback Requirement as a result of an offer of Voluntary Holdback.

Tier Three	Non-WRAP-Participants	Any Participant capacity offered outside the program (not otherwise committed to WRAP obligations).	No obligations to the WRAP.

In Tiers One and Two, all transactions will be settled under the WRAP Settlement Pricing as detailed in *BPM 206 Settlement Pricing.*

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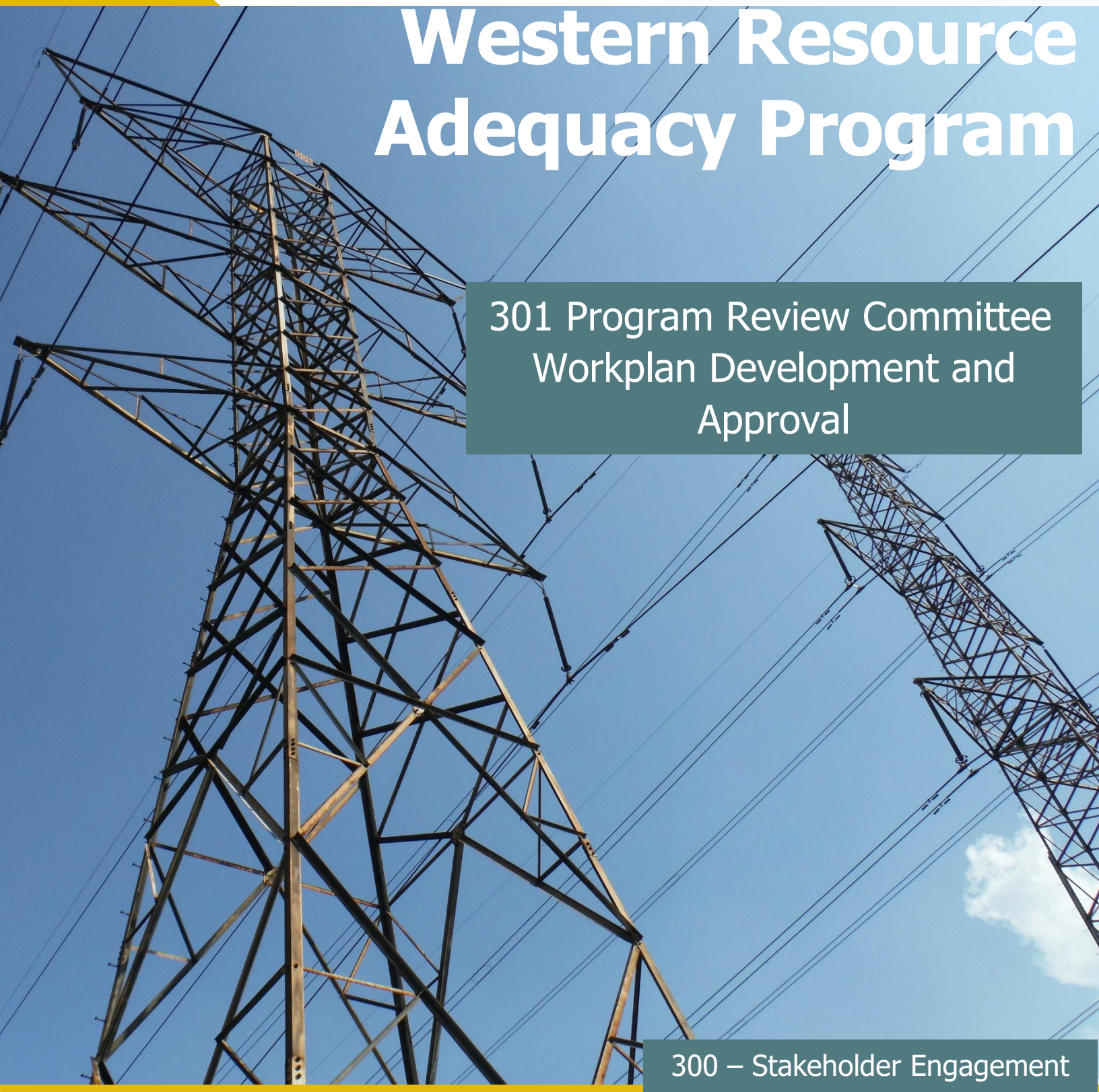
Western Resource Adequacy Program



301 Program Review Committee Workplan Development and Approval

300 – Stakeholder Engagement

Revision History

Manual Number	Version	Description	Revised By	Date
301	0.1	RAPC Glance Version	Rebecca Sexton	9/19/2023
301	0.2	Public Comment Version	Rebecca Sexton	9/21/2023
301	0.3	RAPC & PRC Discussion	Rebecca Sexton	11/9/2023
301	0.4	RAPC Endorsement	Rebecca Sexton	11/29/2023
301	0.5	Board Consideration	Rebecca Sexton	11/30/2023
301	1.0	Board Approved	Rebecca Sexton	12/6/2023
301	1.1	2024-NTFP-2 Edits	Katie Gregor	1/27/2025
301	2.0	Annual BPM Review	Elise Mousseau	1/15/26

Table of Contents

301 Workplan Development and Approval

1. Introduction

When a change to the Tariff or Business Practice Manuals (BPMs) is requested by a stakeholder, the established process and criteria for reviewing proposed amendments by the Program Review Committee (PRC) will be utilized. This process has two stages – Workplan Development and Approval (*BPM 301*) and Proposal Development and Consideration (see *BPM 302*). This PRC Workplan Development and Approval BPM describes the change request management process through the Workplan development stage. Section ~~4~~4 Change Request describes the process of submitting a Change Request Form and review of submitted requests by the Program Administrator and the PRC. Section ~~5~~5 Workplan Development outlines the process by which a Workplan is developed, reviewed, and approved.

1.1. Intended Audience

BPM 301 is intended for use by the Western Power Pool (WPP) Board, PRC, Program Administrator, Program Operator, and other interested individuals or entities. This BPM will be particularly useful to stakeholders submitting Change Request Forms and the PRC (which holds responsibility for Workplan development).

1.2. What You Will Find in This Manual

This document includes material relevant to the WRAP change control process, including the method by which Change Request Forms are submitted by the public, reviewed by the Program Administrator and the PRC, and subsequently implemented into a PRC-developed Workplan.

1.3. Purpose

BPM 301 provides an overview of the change request and review process for proposed changes to the Tariff and BPMs. The intent of all stakeholder engagement-related BPMs (BPMs in the 300 series) is to ensure that changes to the Tariff and BPMs are undertaken transparently.

Nothing in BPM 301 changes in any way the ultimate authority of the independent Board over all aspects of WRAP, or the Board's exclusive authority under Section 2.1 and Section 3.1 of the Tariff, to approve WPP to file, and direct WPP to file, Tariff amendments under Federal Power Act Section 205.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 301 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here~~:

Lead Sponsor: The individual identified on the Change Request Form as the Lead Sponsor.

Change Request Form: A form available on the WPP website by which an individual may submit a Concept.

Concept: A suggested change to the Tariff or BPMs.

Non-Task Force Proposal: A Concept that could be implemented without being further developed into a Proposal by a Task Force.

Proposal: A detailed description of a Concept identified in a Board approved Workplan.

Workplan: Plan of action that identifies Concepts for possible development into Proposals.

Task Force: ~~As defined in *BPM 302 PRC Proposal Development and Consideration.*~~ A group charged with developing a Concept into a Proposal ready for public comment

2. Background

The PRC is a multi-sector stakeholder committee charged with receiving, considering, and proposing design changes to the WRAP. The PRC will act as the clearing-house for all recommended design changes not specifically identified as exigent by the Resource Adequacy Participant Committee (RAPC) (see *BPM 303 Expedited Review Process* for additional detail on such changes). Recommended changes may come from any stakeholder.

The PRC will be provided with facilitation support from the Program Administrator and program design/technical support from the Program Operator, as needed. If a stakeholder wishes to request changes to the WRAP, the stakeholder should submit a written explanation of the requested change, including any supporting information or data, to the PRC via the Change Request Form located on the WPP's website.

The PRC will review and prioritize requested changes into a draft Workplan (suggesting which Concepts will be developed into Proposals) and schedule; the Workplan will be

reviewed by all WRAP-related committees and the public before being approved by the Board.

3. Change Request and Workplan Development Timeline

Activity/Milestone	Deadline	Process Owner
Final day to submit Change Request Forms	December 31st	Lead Sponsor
Concept compilation delivered to PRC	January 15th	Program Administrator
PRC prioritization of Concepts	January 15th - February 1st	PRC
Level of effort review	February 1st - February 15th	Program Administrator/Program Operator
Completion of draft Workplan	February 15th - March 15th	PRC
Stakeholder comment period	March 15th - April 15th	Stakeholders
Revision of Workplan	April 15th - May 15th	PRC
Distribution to the Board	May 15th	Program Administrator
Board approval of Workplan	June 30th	Board

4. Change Request

At any time, Participants, the Committee of State Representatives (COSR), the Board or any of its members, other WRAP-related committees, stakeholders, or the public can suggest a change to the Tariff or BPMs. Such a change request will go through the PRC change control and stakeholder review process. Section 3 shows the change request timeline from the submission of the Change Request Form to Board approval of a Workplan.

4.1. Change Request Form

A suggested change to the Tariff or BPMs is initiated via submission of a Change Request Form. This form is available on the WPP website. A Lead Sponsor will be

identified on each Change Request Form. For a Change Request Form to be considered complete, the following information will be provided (required information is indicated by *):

- **Lead Sponsor Information***
  - Name, Title, Organization, Email, Phone Number, Date of Submission
- **Summary of Request***
  - Brief overview of requested change, limited to 100 characters
- **Co-Sponsor(s) Information**
  - Name, Title, Organization, Email, Phone Number - *Recorded in the case of more than one person or organization submitting a change collaboratively*
- **Designation of the type of change requested***
  - Correction (i.e., revision of erroneous language or language that needs clean-up for grammatical errors or inconsistency across governing documents - no change to intent or policy)
  - Clarification (i.e., language revision to better represent intent - no changes to functionality or policy)
  - Enhancement (i.e., language revision to expand upon existing intent or functionality)
  - New provision, criteria, protocol, or business practice (i.e., additional language to accommodate new policy or new functionality)
  - Change (i.e., a change in the existing policy – will replace existing language)
  - Other (i.e., changes that do not fall into the categories listed above)
- **Description of Change***
  - Description of the issue*
  - Proposed solution to the issue described
  - Identification of the document (e.g. Tariff or specific BPM) and/or language within such document to which a change is recommended, and/or recommended language to execute the proposed change
- **Impact of Change***
  - Benefits from making this change*
  - Any data or information available that would characterize the importance or magnitude of the issue (including file attachments as required)
- **Flag as Non-Task Force Proposal**
  - Indication that the Lead Sponsor proposes the Concept could be implemented without being further developed into a more detailed Proposal by a Task Force.

Change Request Forms can be submitted at any point during the year. The Program Administrator will inspect submitted Change Request Forms within 15 days of their submission and inform the Lead Sponsor if the Change Request Form is incomplete. An incomplete Change Request Form may not receive further consideration until it has been completed. After the Lead Sponsor is notified of an incomplete Change Request Form they will be given the opportunity to provide revisions and must re-submit a complete form.

In the event that similar Concepts are requested by more than one stakeholder, the Program Administrator may recommend co-sponsorship of the Concept to the Lead Sponsors of similar Concepts; Lead Sponsors can determine whether to withdraw their individual submissions and resubmit a Concept as co-Sponsors at their will.

If a Concept is flagged as a Non-Task Force Proposal and the Program Administrator agrees the Concept can proceed as a Non-Task Force Proposal, the Program Administrator and Lead Sponsor will present the Change Request Form to the PRC for consideration at the next scheduled PRC meeting. If the Program Administrator, or subsequently the PRC, determines that the proposed Concept is not a Non-Task Force Proposal then the Change Request Form will be modified to remove the Non-Task Force Proposal designation and proceed in the same manner as any other Change Request Form unless it is withdrawn by the Lead Sponsor.

On December 31 of each year, the Program Administrator will compile all Change Request Forms completed and submitted in that calendar year and begin an initial review January 1 the following year. Incomplete forms submitted after December 16 will not be considered in the following year's Workplan.

4.2. Compilation of Concepts

The Program Administrator will compile all completed Concepts (those not flagged as Non-Task Force Proposals) and deliver this list (and the Concept submissions) to the PRC by January 15 to facilitate the start of its Workplan development.

In the event that similar Concepts are requested by more than one stakeholder and the Lead Sponsors of the similar Concepts elected to maintain separate Concepts, or time did not allow for the Program Administrator to notify the Lead Sponsors of the similar Concept, the Program Administrator will note such similarity to the PRC and notify the Lead Sponsors not previously notified.

PRC review and processing of Non-Task Force Proposals is discussed in Section 5.3.1.1~~5.3.1.1~~.

4.3. PRC Review of Concepts

The PRC will prioritize Concepts received in the compiled list according to a PRC-determined method involving established criteria. The PRC will aim to reach agreement on prioritization via consensus, however, given a situation where consensus is not achieved, the PRC will vote on a prioritized slate of Concepts.

This prioritization process will be complete by February 1.

4.4. Level of Effort Review

Once the Program Administrator receives the prioritized Concept list, the Program Administrator will work with the Program Operator to give each Concept in the list a level of effort ranking. This level of effort ranking will include a description of the requirements for addressing each Concept (Program Administrator and Program Operator support, Participant engagement, etc.) as well as the anticipated timeline. The PRC will be supplied with the criteria used to determine the level of effort ranking. The level of effort review will be completed by February 15.

5. Workplan Development

Once the Concepts have been reviewed, prioritized, and given a level of effort score and description, the PRC will begin annual Workplan development.

5.1. PRC Development of Workplan

The Workplan will include the following:

1) Executive Summary
2) Background
3) Proposed Plan
4) Summary of Recommended Concepts
5) Supporting Analysis
6) Schedule

The schedule will include a high-level timeline for each Concept recommended for development into a Proposal. Such schedules will include Proposal development but will not include potential timelines for implementation (implementation timelines will be determined as part of the Proposal development process - see *BPM 302 PRC Proposal Development and Consideration*). The schedules for Workplan implementation may extend beyond a single year. In years where a Workplan is under development at the same time as a prior Workplan is being executed, the new Workplan will account for the past year(s) Workplan(s) and provide an updated combined schedule.

The Workplan will include appendices providing reviewers of the proposed Workplan insight into the recommendations of the PRC and the decision-making process. At minimum, appendices for the Workplan will include all relevant completed Change Request Forms, any metrics or categorization methods used to evaluate and prioritize Concepts, and information regarding the proposed Task Forces (e.g. Task Force size, subject matter expertise) for Proposal development of each Concept.

5.2. Draft Workplan Review Process

The PRC will publish a draft Workplan for review on March 15.

5.2.1. Stakeholder Review

The draft Workplan will be published on the WPP website on March 15 and open to comment until April 15. During this time the RAPC, COSR, and the public may review and submit comments on the draft Workplan. The Program Administrator and Program Operator may provide comments concurrently at this time.

5.2.2. Comments Intake

At the end of the comment period on April 15, the Program Administrator will compile all comments received and distribute them to the PRC. The PRC will review the comments provided and revise the draft Workplan as it sees fit. This revision process is allocated four weeks and will be completed by May 15.

Prior to Board distribution, the PRC will create a summary of comments received, including a narrative describing why they were or were not addressed. The full set of comments will be attached to the draft Workplan as an appendix. The revised draft Workplan will be distributed to both the Board and RAPC, and also posted publicly by May 15.

5.3. Workplan Approval

The revised draft Workplan will be presented to the Board of Directors. The Board will consider and act on the Workplan in public session no later than its next quarterly board meeting, during which RAPC and other stakeholders will have the opportunity to express any opinions in public comment. Board approval of a Workplan will trigger implementation and Proposal development (see *BPM 302 PRC Proposal Development and Consideration*). The Board will determine the appropriate next steps if it does not approve the Workplan or seeks amendments.

5.3.1.1. Consideration of Non-Task Force Proposals

If the PRC determines that a Change Request Form meets the Non-Task Force Proposal criteria, the Non-Task Force Proposal will proceed to the Proposal review and approval processes, as detailed in *BPM 302 PRC Proposal Development and Consideration*.

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Western Resource Adequacy Program

302 Program Review Committee Proposal Development and Consideration

300 – Stakeholder Engagement

Revision History

Manual Number	Version	Description	Revised By	Date
302	0.1	RAPC Glance Version	Rebecca Sexton	10/19/2023
302	0.2	Public Comment	Rebecca Sexton	10/23/2023
302	0.3	RAPC & PRC Discussion	Rebecca Sexton	11/15/2023
302	0.4	RAPC Endorsement	Rebecca Sexton	11/29/2023
302	0.5	Board Consideration	Rebecca Sexton	11/30/2023
302	1.0	Board Approved	Rebecca Sexton	12/6/2023
302	2.0	Annual BPM Review	Elise Mousseau	1/15/26

Table of Contents

302 Proposal Development and Consideration

1. Introduction

When a change to the Tariff or Business Practice Manuals (BPMs) is requested by a stakeholder [and does not qualify as an exigent circumstance within the meaning of Tariff Section 4.1.3 (see *BPM 303 Expedited Review Process*)] or other change specifically reserved to the Resource Adequacy Participant Committee (RAPC) under the Tariff, the established process and criteria for reviewing proposed amendments by the Program Review Committee (PRC) will be utilized. This process has two stages – Workplan development and approval and Proposal development and consideration. BPM 302 describes how an individual Concept moves through the change control process, including how a Proposal is developed, commented upon, and approved for implementation. The Proposal Development~~Proposal Development~~ section describes the creation of Task Forces by the PRC to address a proposed change to the Tariff or BPMs, and the Proposal development process that occurs within that group. The Proposal Review section describes the process by which a Proposal is commented upon, revised, and approved. Non-Task Force Proposals, as determined by the PRC (see *BPM 301 PRC Workplan Development and Approval*) do not undergo Proposal development by a Task Force and proceed directly to the Proposal review process.

1.1. Intended Audience

BPM 302 is intended for the PRC, Program Administrator, Program Operator, and other interested individuals or entities. This BPM will be particularly useful to members of PRC Task Forces responsible for the development of a Proposal according to an established Workplan, as well as to Western Resource Adequacy Program (WRAP) stakeholders participating in the Proposal review and consideration process.

1.2. What You Will Find in This Manual

BPM 302 contains material relevant to the WRAP change control process, including the method by which Concepts are developed into Proposals, revised by the PRC and assigned Task Forces, and subsequently considered for implementation into the Tariff or BPMs. This manual also describes review and approval of Non-Task Force Proposals.

1.3. Purpose

BPM 302 provides an overview of the Proposal development and consideration process for changes to the Tariff or BPMs. The intent of all stakeholder engagement related BPMs (BPMs in the 300 series) is to ensure that changes to the Tariff and approved BPMs are undertaken transparently.

Nothing in this BPM changes in any way the ultimate authority of the independent Board over all aspects of WRAP, or the Board's exclusive authority under Section 2.1 and Section 3.1 of the Tariff, to approve the Western Power Pool (WPP) to file, and direct WPP to file, Tariff amendments under Federal Power Act Section 205.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 302 have their meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 302 are defined here.~~

Concept: As defined in *BPM 301 PRC Workplan Development and Approval.*

Lead Sponsor: As defined in *BPM 301 PRC Workplan Development and Approval.*

Non-Task Force Proposal: As defined in *BPM 301 PRC Workplan Development and Approval.*

Proposal: As defined in *BPM 301 PRC Workplan Development and Approval.*

Task Force: As defined in *BPM 301 PRC Workplan Development and Approval.*

Workplan: As defined in *BPM 301 PRC Workplan Development and Approval.*

2. Background

The PRC is a multi-sector stakeholder committee charged with receiving, considering, and proposing design changes to the WRAP. The PRC will act as the clearinghouse for all recommended design changes not specifically identified as exigent by the RAPC (*see BPM 303 Expedited Review Process* for additional detail on such changes). Recommended changes may come from Participants, the Committee of State Representatives (COSR), the Board or any of its members, other WRAP-related committees, stakeholders, or the public.

The PRC will be provided with facilitation support from the Program Administrator and program design/technical support from the Program Operator, as needed. If a stakeholder seeks to change the Tariff or a BPM, the stakeholder should submit a written explanation of the requested change, including any supporting information or data, to the PRC via the Change Request Form located on the WPP website.

After a Workplan for addressing proposed changes is created and approved (see *BPM 301 PRC Workplan Development and Approval*), the PRC will identify Task Forces to refine requested changes into full Proposals, working with the Program Administrator and Program Operator. The draft Proposal, and any Non-Task Force Proposals, will be

reviewed by the Program Administrator and Program Operator, the public, the COSR, and the RAPC before being considered by the Board.

3. Proposal Development

In accordance with the schedule and guidance provided in the Workplan, the PRC will identify Task Forces as appropriate to develop Workplan Concepts into Proposals. Once a Proposal is drafted, it will be reviewed and presented for comment and consideration. Non-Task Force Proposals, as determined by the PRC, do not require further development and proceed directly to the Proposal review process (see Section 4).

3.1. Task Force Creation

The PRC's draft Workplan will identify the skillsets required on a Task Force for it to develop a Concept (or set of Concepts) into a Proposal. These skillsets may include, but are not limited to, subject matter expertise on: transmission systems, power marketing, legal, regulatory, financial, or other resource-specific knowledge. A Task Force may be assigned to a single Concept or group of similar Concepts as identified in the Workplan and will be populated with the identified skills and knowledge to develop a specific Concept (or set of Concepts) into a Proposal (or Proposals).

The Concept's Lead Sponsor will participate as a member of the Task Force. The remainder of the Task Force may include members of the PRC or any other individuals with specific subject matter expertise. The PRC will take nominations for Task Force participation, review the pool of interested individuals, and determine the roster for each Task Force according to the schedule from the Workplan.

In the process of selecting Task Force members, the PRC will endeavor to balance the need for diversity of perspective with creating groups appropriately sized to prioritize efficiency.

3.1.1. Task Force Decision-Making

Each Task Force will decide its own procedures pertaining to decision-making processes (e.g., voting/consensus), leadership structure (e.g., chair/co-chair), and meeting frequency. All Task Forces will have non-Program Administrator/Program Operator leaders who will work with the Program Administrator and Program Operator to facilitate Task Force engagement and processes.

The Program Administrator will be tasked with supporting Task Force administrative functions and collaborating with the Task Force (with help from the Program Operator) to provide options, recommendations, and input on draft Proposals as requested.

3.2. Proposal Drafting Process

For a given Concept (or Concepts), the associated Task Force develops a Proposal to address the requested changes. This Proposal shall include:

- A description of the need and the benefits resulting from the proposed change;
- Specific changes or updates to the Tariff or BPMs (e.g., redlines) that would be required to implement the Proposal;
- Alternative updates that were considered (if applicable);
- A resource and cost assessment and feasibility review by the Program Administrator and Program Operator; and
- A proposed implementation timeline.

The Task Force leadership (e.g., chair, co-chairs) will provide monthly status updates on the draft Proposal to the PRC. The monthly report will include a written summary of activities accomplished and decisions made by the Task Force since the last monthly report. PRC members may use these updates to provide feedback and input to Task Forces in advance of the review of completed Proposals. The PRC may determine it is necessary to work with the Program Administrator, Program Operator, and RAPC to consider implementation schedules of multiple Proposals to facilitate execution (e.g., deciding to implement multiple changes in conjunction, or timing implementation for shoulder seasons); such an approach may be implemented by the PRC in the review of and comments on Proposals.

3.2.1. Program Administrator/Program Operator Comment and Feasibility Review

The Program Administrator and Program Operator will collaborate with the Task Force to provide a feasibility review that addresses the time, schedule, cost, and staffing requirements of the Proposal. This review will be provided when the Proposal is complete, prior to the Proposal review period. The Program Administrator and Program Operator may suggest alternatives and otherwise provide insight to the Task Forces during the Proposal drafting process and to the PRC during the evaluation and decision-making process.

3.2.2. Development of Questions for Public Comment

To facilitate stakeholder engagement, the Task Force will propose a set of questions for consideration during comment windows. At this stage, the Task Force will revisit the timelines proposed in the Workplan for comment collection and adjust as necessary.

3.2.3. Proposal Ready for Comment

Once a Task Force has completed its development of a draft Proposal and questions for public comment, the PRC will verify its completeness and direct the Program Administrator to post it for public comment. This review by the PRC is not an

endorsement of the proposed changes. If the PRC determines that the Proposal is not complete, the PRC will provide feedback to the Task Force as to the Proposal's deficiencies.

4. Proposal Review

Once a Proposal is ready for public comment, the Proposal is published on the WPP website. The Task Force can recommend that the Program Administrator host a webinar with the support of the PRC, Task Force, or Program Operator, as needed, to introduce the Proposal to the public. Non-Task Force Proposals (those the PRC has agreed do not necessitate development by a Task Force, see *BPM 301 PRC Workplan Development and Approval* for further detail) are directly published on the WPP website for public comment. For the purposes of Section ~~44~~ Proposal Review, the term "Proposal" includes Non-Task Force Proposals, and in that reading the term "Task Force" implies the Lead Sponsor of the Non-Task Force Proposal.

4.1. Public Comment

The Task Force will recommend to the PRC a duration of no less than two weeks for the open public comment window, depending on the length, complexity, and anticipated impact of the Proposal. The PRC will set a deadline for public comment on a given Proposal. Note that Participants, COSR members, Board members, or anyone else may comment on the draft Proposal during this time. Comments will be submitted to the WPP website.

After the public comment period ends, the Task Force will review all comments submitted and update the Proposal at its discretion. Comments will be made available publicly as they are submitted and will remain available after the comment period closes (through consideration by the Board of Directors). The Task Force will inform the PRC of any changes, either in writing or via a meeting if schedules allow.

4.2. COSR Comments

After the public comment period ends, the updated Proposal will be published on the WPP website for COSR review along with a summary of the public comments received and any changes made to address them.

The Task Force will provide a recommendation to the PRC for the length of the COSR comment period on the Proposal. The PRC will determine a deadline for COSR comments. Comments are submitted by the COSR to the WPP website and will be available publicly upon submission.

After the COSR comment period, the Task Force will review all comments submitted and will update the Proposal at its discretion.

4.3. PRC Endorsement Process

Once the public and COSR reviews of a Proposal are complete and comments have been reviewed by the Task Force and incorporated at its discretion, the PRC will consider whether to endorse the Proposal to the RAPC.

4.3.1. Public Meeting and Decision

The PRC will host a public meeting to review comments received, identify any updates made in response to those comments, and decide whether to endorse the Proposal to the RAPC.

4.3.1.1. PRC Sector Voting

The PRC will endeavor to operate by consensus. If PRC consensus on a Proposal endorsement cannot be achieved, voting will be undertaken in the method described in the PRC charter (posted on the WPP website). The Proposal will progress to the RAPC regardless of the outcome of the PRC process, but attaining PRC endorsement will lower the required RAPC voting threshold per the Tariff.

4.4. RAPC Review

The Proposal will progress to the RAPC regardless of the outcome of the PRC process, but attaining PRC endorsement will lower the required RAPC voting threshold per the Tariff. The RAPC will vote whether to endorse the Proposal to the Board.

For a Proposal to be endorsed by the RAPC, it must pass both House and Senate vote tallies as described in the Tariff. A Proposal endorsed by the PRC requires a 67% affirmative vote in both the House and Senate tally to be endorsed by the RAPC. A Proposal not endorsed by the PRC requires a 75% affirmative vote in both the House and Senate tally to achieve RAPC endorsement.

A RAPC vote on a Proposal can have three outcomes: RAPC endorses the Proposal unmodified, RAPC endorses the Proposal as modified, or votes to reject the Proposal.

4.4.1. RAPC Endorses Unmodified

The RAPC votes to endorse the Proposal without changes.

4.4.1.1. COSR Formal Opposition to Endorsed Proposal

If RAPC votes to endorse a Proposal without change, the COSR has one week to register its opposition to the endorsed Proposal with the RAPC. If the COSR registers its opposition, the RAPC is required to engage with the COSR, including at least two

discussions to attempt to reach a mutually agreeable solution. These discussions will be open to the public and held within four weeks of the COSR's notification of opposition.

4.4.2. RAPC Endorses with Changes

If RAPC makes changes to the Proposal during its vote to endorse, the 75% voting threshold will apply because the Proposal is no longer the same as was endorsed by the PRC.

4.4.2.1. COSR Requests Additional Public Review

If RAPC makes changes to a Proposal when voting on it, COSR leadership will be notified and can elect to initiate an additional public review if COSR determines the RAPC-endorsed Proposal to be substantially different from the Proposal submitted to the RAPC by the PRC. The COSR must notify the chair of the PRC that it would like additional public review within two weeks of the RAPC vote on the changed Proposal.

Once COSR notifies the PRC leadership, the changed Proposal will be posted to the WPP website for a two-week public comment window. The PRC will summarize the comments received, but no further changes are made to the Proposal.

4.4.2.2. COSR Formal Opposition to RAPC Endorsement with Changes

If RAPC endorses a Proposal with changes, the COSR has two weeks to register its opposition to the endorsed Proposal with RAPC. If the COSR registers its opposition, the RAPC is required to engage with the COSR, including at least two discussions to attempt to reach a mutually agreeable solution. These discussions will be open to the public and held within four weeks of the COSR's notification of opposition. These discussions will take place in parallel with any additional public review process requested by COSR per Section 4.4.2.1~~4.4.2.1~~).

4.4.3. RAPC Rejects

If RAPC votes to reject the Proposal, the Proposal terminates (i.e., is not reviewed by the Board), unless the RAPC decision is appealed to the Board.

4.4.3.1. Appeal of RAPC Rejection

If the RAPC votes to reject a Proposal or fails to vote to endorse a Proposal within 30 Days of PRC action, any ~~person~~ stakeholder may appeal to the Board to review and vote on a Proposal. Such an appeal must be submitted to the Program Administrator within two weeks after the RAPC rejection vote or within two weeks after the RAPC's failure to take action within 30 Days after PRC action. Whether to entertain the appeal is solely within the Board's discretion.

4.5. Board Interaction

The Board will receive all Proposals (including all comments received during the review process) for discussion and approval that:

- Have been endorsed by RAPC with no opposition by COSR;
- Have been rejected or not acted upon by the RAPC but has been appealed by a stakeholder to the Board;
- Have been endorsed by the RAPC but identified by COSR as substantially different than the PRC version and have undergone additional public review; or
- Are formally opposed by the COSR, with RAPC and COSR also having met at least two times to attempt a mutually agreeable solution.

4.5.1. Study Session as Needed

The Program Administrator will work with the Task Forces and the PRC to host study sessions for the Board, at the discretion of the Board, on Proposals that have come before the Board for approval.

4.5.2. Stakeholder Comment

Per Board procedures, members of the public, RAPC representatives, COSR members, or other stakeholders may comment during a public Board meeting on a Proposal under consideration by the Board (including a Proposal that has been placed on the Board's consent agenda). It is highly encouraged that stakeholders opposing the Board's approval of a Proposal engage in the public and committee review process on such Proposal to voice concerns and provide written documentation throughout.

4.5.3. Vote

Per Board procedures, the Board will act on the Proposal by either:

- Approval – in which case implementation of the Proposal is initiated;
- Rejection – in which case the Proposal terminates; or
- Changes needed – the Board may determine either to make changes and approve an updated Proposal or to send the Proposal back to any stage in the drafting or review process (at the Board's discretion) with feedback or guidance for necessary updates and repeat all subsequent review processes.

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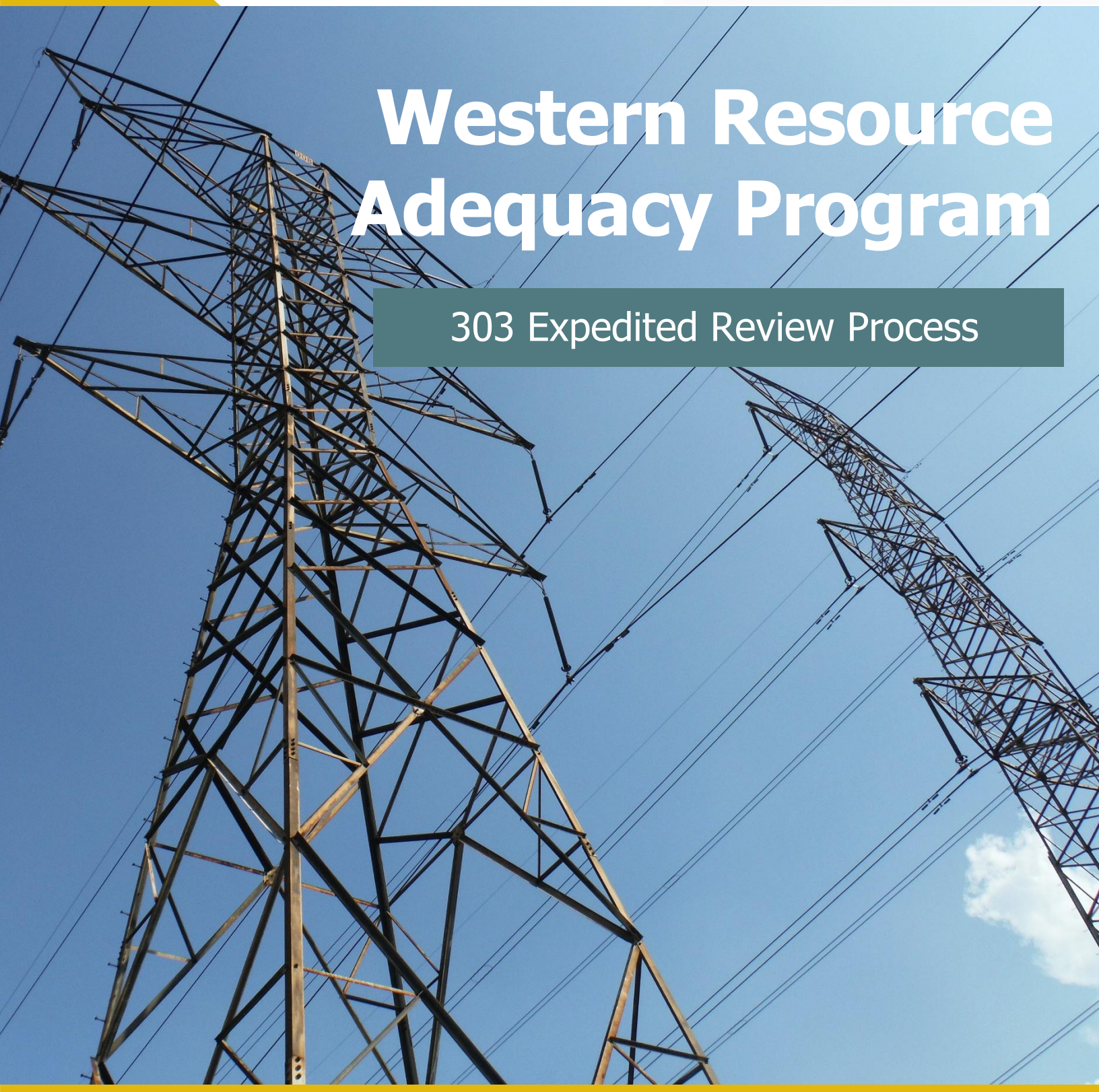

Western Resource Adequacy Program

303 Expedited Review Process

300 – Stakeholder Engagement

Revision History

Manual Number	Version	Description	Revised By	Date
303	0.1	RAPC Glance Version	Rebecca Sexton	10/3/2023
303	0.2	Public Comment Version	Rebecca Sexton	10/6/2023
303	0.3	RAPC & PRC Discussion	Rebecca Sexton	11/2/2023
303	0.4	RAPC Endorsement	Rebecca Sexton	11/13/2023
303	0.5	Board Consideration	Rebecca Sexton	11/30/2023
303	1.0	Board Approved	Rebecca Sexton	12/6/2023
303	2.0	Annual BPM Review	Elise Mousseau	12/23/25

Table of Contents

303 Expedited Review Process

1. Introduction

Expedited Board of Directors' (Board) review of changes to the Tariff or Business Practice Manuals (BPMs) may take place when the Resource Adequacy Participant Committee (RAPC) determines there are Exigent Circumstances [including Federal Energy Regulatory Commission (FERC) mandated amendments, amendments to address immediate reliability impacts, or amendments with significant impacts to utility service]. In these circumstances, the RAPC will work with the Western Power Pool (WPP) staff to prepare the design change and may propose such a change directly to the Board. The Program Review Committee (PRC), Committee of State Representatives (COSR), and public will participate and comment directly to the Board during the Expedited Review Process, rather than using the customary stakeholder review process set forth in the Tariff. This Expedited Review Process BPM defines the process for reviewing and adopting changes that are exigent.

1.1. Intended Audience

This document is intended for the Western Resource Adequacy Program (WRAP) committees including the RAPC, COSR, and PRC, as well as other interested individuals or entities.

1.2. What You Will Find in This Manual

BPM 303 includes material relevant to changes to WRAP rules that can be considered under the Expedited Review Process due to Exigent Circumstances.

1.3. Purpose

BPM 303 provides an overview of the Expedited Review Process for implementing changes to the Tariff and BPMs due to Exigent Circumstances. The intent of all stakeholder engagement related BPMs (BPMs in the 300 series) is to ensure that changes to the Tariff and BPMs are undertaken transparently.

Nothing in this BPM changes in any way the ultimate authority of the independent Board over all aspects of WRAP, or the Board's exclusive authority under Section 2.1 and Section 3.1 of the Tariff, to approve WPP to file, and direct WPP to file, Tariff amendments under Federal Power Act Section 205.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 303 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 303 are defined here.~~

Exigent Circumstances: Circumstances that the RAPC determines require amendments to the Tariff or BPMs due to FERC~~-~~ mandates, immediate reliability impacts, or significant impacts to utility service.

Expedited Proposal: A RAPC determined amendment to the Tariff or BPMs requiring expedited Board review due to Exigent Circumstances.

Expedited Review Process: The activities undertaken by WRAP committees (RAPC, PRC, COSR), stakeholders, and the ~~WPP~~ Board when an Exigent Circumstance is identified and a change to the Tariff or BPMs is determined necessary by the RAPC.

2. Expedited Proposal Development

A Participant, the Program Administrator, or the Program Operator can submit a request for an Expedited Review Process to the RAPC Chair at any time. If the RAPC deems that the change must be addressed expeditiously due to Exigent Circumstances, the RAPC will develop an Expedited Proposal and schedule it for RAPC review. The Program Administrator and the Program Operator also may provide, but are not required to provide, a feasibility review that addresses the time, cost, and staffing requirements of the Expedited Proposal. The Expedited Proposal shall be considered by the RAPC during a public meeting, according to RAPC meeting procedures, and then if endorsed by the RAPC, shall be presented to the Board concurrent with review by the COSR, PRC and other WRAP stakeholders.

2.1. Expedited Proposal Circulation

The WPP will endeavor to post the Expedited Proposal and feasibility review to the WPP website two weeks prior to Board review, as time allows. Any comments submitted prior to the Board meeting by the COSR, PRC, or other WRAP stakeholders will be distributed to the Board for consideration.

2.1.1. COSR Opposition

If the COSR formally opposes the Expedited Proposal provided by the RAPC to the Board, the COSR can require that the RAPC engage in one open public discussion, provided this does not unreasonably hinder the Board's timely consideration.

2.2. Board of Directors Review

The Board will be given an opportunity to review the Expedited Proposal and any comments provided by ~~stakeholders or~~ committees or stakeholders and may itself comment upon the Expedited Proposal before taking action.

The Board will take action on the Expedited Proposal by either:

1) Voting for approval – in which case WPP will make a Federal Power Act Section 205 filing with FERC to amend the Tariff, or will update the BPM(s) accordingly;

2) Voting for approval with changes – in which case the RAPC shall consider the changes and either vote to endorse the updated Expedited Proposal or vote to endorse a further updated Expedited Proposal. If the RAPC votes to endorse the Board's changes or takes neither of these two actions on the changed Expedited Proposal within two weeks, WPP will make a Federal Power Act Section 205 filing with FERC to amend the Tariff, or will update the BPM(s) accordingly. If the RAPC makes changes to the Board's recommendations, RAPC shall resubmit the Proposal to the Board for review;

3) Voting to return the Proposal to RAPC with suggested changes –in which case the RAPC will consider the Board's recommendations and may submit an updated Proposal to the Board for review; or

4) Voting for rejection – in which case the Expedited Proposal terminates. Nothing prohibits any part of a rejected Expedited Proposal from being proposed as a Concept for consideration by PRC in future (see *BPM 301 PRC Workplan Development and Approval*).

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Western Resource Adequacy Program

304 Amendments to Schedule 1 and WRAP Agreement

300 – Stakeholder Engagement

Revision History

Manual Number	Version	Description	Revised By	Date
304	0.1	RAPC Glance Version	Rebecca Sexton	1/18/2024
304	0.2	Public Comment Version	Rebecca Sexton	1/19/2024
304	0.3	RAPC & PRC Discussion	Rebecca Sexton	2/9/2024
304	0.4	RAPC Endorsement	Rebecca Sexton	2/23/2024
304	0.5	Board Approval	Rebecca Sexton	2/29/2024
304	1.0	Board Approved	Rebecca Sexton	3/7/2024
304	2.0	Annual BPM Review	Elise Mousseau	12/23/25

Table of Contents

304 Amendments to Schedule 1 and WRAPA

1. Introduction

The Resource Adequacy Participant Committee (RAPC) represents Participants' interests and is the venue for Participant engagement with the Program Administrator and Program Operator on Western Resource Adequacy Program (WRAP) implementation and operations. While the Program Review Committee (PRC) is the clearinghouse for all recommended changes to Business Practice Manuals (BPMs) or the Tariff generally, the RAPC is responsible under the Tariff for receiving, considering, and proposing Amendments to Schedule 1 of the Tariff and Amendments to the WRAP Agreement (WRAPA). In the event that a change is proposed to Schedule 1 of the Tariff or the WRAPA, the RAPC will work with the Program Administrator to prepare any such changes to these provisions and may propose such changes to the Board of Directors (Board) for approval. Consideration of such changes will occur at RAPC as set forth in the Tariff and further described in *BPM 304 Amendments to Schedule 1 and WRAPA*, rather than using the general stakeholder review process set forth in *BPM 301 PRC Workplan Development and Approval, BPM 302 PRC Proposal Development and Consideration*, or *BPM 303 Expedited Review*.

1.1. Intended Audience

BPM 304 is intended for the RAPC and the Board ~~of Directors~~ as well as other interested individuals or entities.

1.2. What You Will Find in This Manual

BPM 304 describes the process for reviewing and adopting changes to the WRAPA and Schedule 1 of the Tariff.

1.3. Purpose

BPM 304 describes the process for implementing changes to the WRAPA and Schedule 1 of the Tariff. The intent of all stakeholder engagement related BPMs (BPMs in the 300 series) is to ensure that changes to the Tariff and BPMs are undertaken transparently. WPP will work with any party to a non-conforming version of the WRAPA to seek adoption of any Amendments to the pro-forma WRAPA into the non-conforming WRAPA.

Nothing in BPM 304 changes in any way the ultimate authority of the independent Board over all aspects of WRAP, or the Board's exclusive authority under Section 2.1 and Section 3.1 of the Tariff, to approve the Western Power Pool (WPP) to file, and direct WPP to file, Tariff amendments under Federal Power Act Section 205.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 304 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff that are specific to BPM 304 are defined here.~~

Amendment: For purposes of BPM 304 only, a proposed change to the WRAPA or Schedule 1 of the Tariff.

2. Amendment Requirements

Any Amendment proposed to the RAPC and sponsored by the Program Administrator, the Board, or a Participant must include:

- A description of the need and the benefits resulting from the Amendment;
- Specific changes or updates to the WRAPA or Schedule 1 of the Tariff (e.g. redlines) required to implement the Amendment; and
- An impact assessment of the Amendment.

The Program Administrator will collaborate with the RAPC or the Amendment sponsor to provide an impact assessment of the Amendment, including the benefits of the Amendment and the importance of the issue. The Program Administrator may suggest alternatives and otherwise provide guidance to the RAPC or the Amendment sponsor during the drafting or review and voting process. The completed Amendment may then be submitted to the RAPC Chair at any time for review (see Section 3).

3. RAPC Amendment Review

When the RAPC Chair receives a completed Amendment request (see Section 2), the RAPC will proceed with a review and comment period. The RAPC Chair and Program Administrator will work together to determine how long this comment period should be, depending on the length, complexity, and anticipated impact of the Amendment. Comments will only be taken from Participants and will be submitted to the WPP website and publicly viewable.

The Amendment sponsor may decide to update the Amendment based on comments received prior to RAPC consideration of the Amendment. Updates based on comments will not trigger additional comment windows unless requested by the Amendment sponsor. Comments on the developed Amendment will be made available to the Board as part of the Board review process.

4. RAPC Endorsement

The Amendment will be considered by the RAPC during a public meeting, according to RAPC meeting procedures. In this meeting, the RAPC will vote whether to endorse the Amendment to the Board.

For an Amendment to be endorsed by the RAPC, it must pass both House and Senate vote tallies as described in the Tariff. An Amendment requires a 75% affirmative vote in both the House and Senate tally to achieve RAPC endorsement.

A RAPC vote on an Amendment can have three outcomes:

1) The RAPC votes to endorse the Amendment without changes – in which case the Amendment proceeds to the Board with comments provided;

2) The RAPC makes changes to the Amendment – in which case the Amendment proceeds to the Board with comments or redlines of the changes made; or

3) The RAPC votes to reject the Amendment – in which case the Amendment sponsor may decide to allow the proposal to terminate (pending any appeal to the Board for further consideration by a Participant, the Program Administrator, or a Board member, see Section 5), may provide changes to the Amendment to be reconsidered by the RAPC, or may request consideration by the Board.

5. Board of Directors Review

The Board will receive all Amendments that have been endorsed by RAPC (along with any comments received during the review process and any RAPC endorsement or commentary) for review and consideration. The Board shall have sole discretion to consider (or not) any Amendment that was rejected or not acted upon by the RAPC and any requests by a Participant, the Program Administrator, or a Board member for consideration of any Amendments that have been rejected by the RAPC or reviewed by the RAPC but not acted upon.

A request for the Board to consider an Amendment previously rejected by RAPC must be submitted to the Program Administrator within 2 weeks after the RAPC rejection vote.

The Board may take any of the following actions on the Amendment or no action at all:

1) Voting for approval – in which case WPP will make any necessary Federal Power Act Section 205 filings with FERC to amend the WRAPA and/or Schedule 1 in the Tariff accordingly;

2) Voting for approval with changes – in which case the RAPC shall consider the changes and either vote to endorse the updated Amendment or vote to endorse a further updated Amendment. If the RAPC votes to endorse the Board's changes or takes neither of these two actions on the Amendment within four weeks, WPP will make a Federal Power Act Section 205 filing with FERC to amend the WRAPA and/or Schedule 1 in the Tariff. If the RAPC makes additional changes to the Board's recommendations, RAPC shall resubmit the Amendment to the Board for review;

3) Voting to return the Amendment to RAPC with suggested changes or other comments –in which case the RAPC will consider the Board's recommendations and may submit an updated Amendment to the Board for review; or

4) Voting for rejection – in which case the Amendment terminates. Nothing prohibits any part of a rejected Amendment from being proposed in the future.

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Western Resource Adequacy Program

401 New Participant Onboarding

400 – Auxiliary

Revision History

Manual Number	Version	Description	Revised By	Date
401	0.1	RAPC Glance Version	Rebecca Sexton	3/21/2024
401	0.2	Public Comment	Rebecca Sexton	4/3/2024
401	0.3	RAPC & PRC Discussion	Rebecca Sexton	5/2/2024
401	0.4	RAPC Endorsement	Rebecca Sexton	5/9/2024
401	0.5	Board Approval	Rebecca Sexton	5/17/2024
401	1.0	Board Approved	Rebecca Sexton	6/13/2024
401	1.1	2024-NTFP-2 Edits	Katie Gregor	1/27/2025
401	2.0	Annual BPM Review	Elise Mousseau	12/23/25

Table of Contents

401 New Participant Onboarding

1. Introduction

The New Participant Onboarding Business Practice Manual (BPM) consists of three sections. The Application and Registration section outlines the activities to occur in conjunction with the execution of a Western Resource Adequacy Program (WRAP) Agreement (WRAPA), which initiates Participant involvement in the WRAP. The WRAP Administration section describes the process by which new Participants are incorporated into WRAP committees and receive Participant resources. The WRAP Program Implementation section describes activities necessary to begin involvement in the Forward Showing Program and Operations Program.

1.1. Intended Audience

BPM 401 is intended for entities in the process of or considering joining the WRAP. BPM 401 is particularly useful for individuals who will be responsible for Participant implementation and participation in various aspects of the WRAP, including but not limited to the Resource Adequacy Participant Committee (RAPC), Forward Showing Program, or Operations Program.

1.2. What You Will Find in This Manual

BPM 401 includes three main sections: Application and Registration, WRAP Administration, and WRAP Program Implementation.

1.3. Purpose

BPM 401 provides guidance for new Participants that are being onboarded into the WRAP and for interested entities to gather information and start preparing for potential future onboarding.

1.4. Definitions

All capitalized terms that are not otherwise defined in BPM 401 have the meaning set forth in the Tariff or in another BPM. ~~Any capitalized terms not found in the Tariff are defined here:~~

Forward Showing Demonstration: As defined in *BPM 108 FS Submittal Process.*

Participant Technology Solutions Overview (PTSO): Document produced by the Program Administrator and Program Operator that provides Participants an overview of the technical details necessary to set up, implement, and test WRAP systems.

Program Signatory: A class of corporate membership in the WPP, as defined in the bylaws of WPP.

Request Management System (RMS): As defined in *BPM 101 Advance Assessment.*

2. Application

Any Load Responsible Entity applying to participate in the WRAP must execute the WRAPA as set forth in Attachment A of the Tariff. WRAPAs are to be executed by incoming Participants no later than September 15. Regardless of a signing date prior to September 15, new Participant WRAPAs become effective on September 15, except when FERC by order has established a different effective date for a non-conforming WRAPA.

Table 1 shows the general timeline of activities to be expected by an incoming Participant from signing a WRAPA, registering loads and resources though a limited data request (see Section 2.2) and completing its first Forward Showing Submittal (in year T-1), through to its first Binding Season participating in the Operations Program (denoted as year T-0), and its first Forward Showing Submittal using Qualifying Capacity Contribution (QCC)~~s~~ derived from data turned in at its first Advance Assessment (in T+1, two years after joining).

Table 1. New Participant Entry Timeline

Activity/Milestone	Description	Date	Year
WRAPA Signing Deadline	Participants execute WRAPA (Attachment A in Tariff) for participation in (T-0) Operations Program. Participants may sign before this date.	September 15	(T-1)
Payment of Cash Working Capital Support Charge	Tariff Schedule 1 details the calculation of the Cash Working Capital Charge	No later than 30 days after WRAPA execution	(T-1)
Effective WRAPA Date	All new participant WRAPAs will be effective on same date	September 15[1]	(T-1)

[1] For non-conforming WRAPA's the effective date is September 15 or the date established by FERC in an order accepting the non-conforming WRAPA.

Registration with Program Operator RMS	Participants provide information to Program Operator to gain access to RMS	September 15 – October 15	(T-1)
Deadline for New Participant Limited Data Request for Registration of Resources and Loads	Participants complete an initial limited Data Request to inform approximated QCC values	October 1	(T-1)
First Summer FS Deadline	Participant will complete a FS Submittal for the following Summer Season; this showing will necessarily include some class average QCC values (from (T-2) Advance Assessment) for resources claimed	October 31	(T-1)
Deadline for First Advanced Assessment data submittal	Participant submits data for modeling future Monthly Forward Showing Planning Reserve Margins (FSPRMs)~~s~~ and QCCs (see BPM 101)	March 1	(T-0)
Operations Program Testing	Participant engages in testing during the shoulder season between Winter and Summer	March 15 – May 31	(T-0)
First Winter FS Deadline	Participant will complete a FS Submittal for the following Winter Season; this showing will necessarily include some class average QCC values for resources claimed	March 31	(T-0)
First Binding Operations Season	Participant will begin Operations Program participation (uses, in part, inputs from FS Submittal from First Summer FS Deadline)~~.~~	June 1 – September 15	(T-0)
Participant completes FS Submittals and participates in Operations Program as specified in the Tariff; participation will necessarily utilize some class average QCC values for resources claimed on FS Submittal for an additional Summer (T-0) and Winter (T+1) FS Submittal			
Summer FS Deadline	Participant will complete a FS Submittal for the following Summer Season; this showing will be the first using QCC values for resources Participant	October 31	(T+1)

	turned in at its first Advance Assessment (T-0)		

Table 2 is an example timeline for a Participant executing a WRAPA in 2024.

Table 2. Example New Participant Entry Timeline

Activity/Milestone	Deadline	Year
WRAPA Signing Deadline	September 15	2024
Effective WRAPA Date	September 15	2024
Payment of Cash Working Capital Support Charge Due Date	No later than 30 days after WRAPA execution/signing	2024
Registration with Program Operator RMS	September 15 – October 15	2024
New Participant Limited Data Request Deadline	October 1	2024
First Summer FS Deadline	October 31	2024
Deadline for First Advanced Assessment data submittal	March 1	2025
Operations Testing	March 15 – May 1	2025
First Winter FS Deadline	March 31	2025
First Binding Operations Season	June 1 – September 15	2025
Participant completes FS Submittals and participates in Operations Program as specified in the Tariff; participation will necessarily utilize some class average QCC values for resources claimed on FS Submittal for an additional Summer (T-0) and Winter (T+1) FS Submittal		
Summer FS Deadline	October 31	2026

The vast majority of Participants will execute a *pro forma* WRAPA as set forth in Attachment A of the WRAP Tariff. A Participant may also join with a non-conforming version of the WRAPA, provided that the Participant's circumstances conform to FERC's standards for non-conforming agreements and the non-conforming WRAPA is approved by FERC. Any non-conforming WRAPA developed between the new Participant and WPP must be submitted to FERC by July 15 such that FERC approval could be granted and the non-conforming WRAPA could become effective by the September 15 deadline.

Participants seeking a non-conforming WRAPA must notify WPP of such a need by providing a proposed draft non-conforming WRAPA for WPP consideration at the earliest opportunity and no later than June 15.

2.1. Election of Transition Binding Seasons

Any Participant whose WRAPA becomes effective before September 15, 2026, shall give notice of its elected first Transition Binding Season according to the processes provided in *BPM 109 Forward Showing Transition Period*.

The Binding Season beginning November 1, 2027, will be the first Binding Season for all Participants whose ~~Western Resource Adequacy Program Agreement (~~WRAPA~~)~~ is effective by September 15, 2026. Transition Period provisions will continue to apply according to the guidelines provided in *BPM 109 Forward Showing Transition Period*.

2.2. Registration of Resources and Loads

Each Participant must register all resources and loads, regardless of whether such resources will be used to satisfy WRAP requirements and whether certain loads will be subject to the requirements of the WRAP. Participants will submit and may modify their registration of resources and loads in accordance with the procedures and timelines set forth in *BPM 101 Advance Assessment, BPM 103 Forward Showing Capacity Requirements,* and *BPM 105 Qualifying Resources*.

If more than one Participant attempts to register the same resource or load, the following procedure will be used to assign the resource or load to a Participant:

- If a Participant attempts to register a resource or load that has already been registered by another Participant, the resource or load will remain registered by the original Participant until both Participants mutually inform WPP in writing that a change to the registration is required.

- If two or more Participants attempt to register the same resource or load during the same window, the Program Administrator will request the Participants determine among themselves the appropriate registration of the resource or load before that resource or load is included in the WRAP.

The treatment of resource registration for immediate participation in the WRAP is discussed further in Section 4.1.1.

2.3. Cash Working Capital Support Charge

A Participant shall pay a Cash Working Capital Support Charge as described in Schedule 1 of the Tariff by the time required under Schedule 1.

2.4. Membership in WPP

WPP is a 501(c)(6) membership organization with corporate members. Program Signatory membership is granted to any Load Responsible Entity participating in a WPP-facilitated reliability program such as the WRAP. Participants must complete a member intake form – located on the WPP website – within 60 Days of executing a WRAPA (or non-conforming WRAPA).

3. WRAP Administration

Upon execution of a WRAPA, a new Participant shall gain access to WRAP committees and sub-committees as appropriate, as well as Participant resources.

3.1. Committee Involvement

WPP will provide incoming Participants with information about all active committees and workgroups that a new Participant is eligible to join, including discussion about expected time commitment and responsibilities for committee members. The incoming Participant shall provide names and contact information for the committees and workgroups in which it is required to or elects to participate.

3.1.1. RAPC Representation

Upon entry, new Participants must designate and provide to WPP the contact information of a representative to serve on the Resource Adequacy Participant Committee (RAPC).

The RAPC is the main venue for Participants to engage in program implementation and compliance, as well as being the highest form of Participant engagement in the governance and decision making of the WRAP. Additional information on the eligibility of individuals to serve, the role of RAPC representatives, and the designation of informational representatives can be found in the RAPC Charter located on the WPP website.

3.1.1.1. Forward Showing and Operations Program Workgroups

New Participants shall also designate contacts for the Forward Showing and Operations Program workgroups. Participants are required to select a primary contact for each workgroup and may elect to designate additional informational contacts.

3.1.1.2. Other RAPC Workgroups

Additional workgroups may be active under the RAPC at the time of Participant entry. Incoming Participants shall be notified of active supplementary workgroups and may choose to provide WPP with contact information of individuals who wish to participate.

3.1.2. Program Review Committee and Nominating Committee

The Program Review Committee (PRC) is generally responsible for receiving, considering, and proposing changes to the WRAP design. Per the Tariff, the PRC is composed of 20 representatives from 10 sectors – four sectors are composed solely of Participants. Upon execution of a WRAPA, the PRC shall be notified of new Participant(s) entry. Additionally, the contact information of the appropriate PRC sector representative(s) will be shared by WPP with the incoming RAPC representative(s), and vice versa. Additional information on the PRC, its role, and the composition of sectors can be found in the PRC Charter on the WPP website.

The Nominating Committee (NC) is responsible for nominating new directors to the WPP Board. The NC is composed of 12 sectors, four of which are composed of Participants. Upon execution of a WRAPA, the same introductions shall take place as those required of the PRC.

3.2. Participant Resources

Upon execution of a WRAPA, WPP will provide incoming Participants with resources for program onboarding, including but not limited to:

- WRAP educational materials;
- Information regarding WRAP committee involvement and stakeholder engagement;
- Information to understand WRAP compliance obligations; and
- The PTSO and information on IT support.

4. WRAP Program Implementation

Prior to submitting a Forward Showing (FS) Submittal~~Workbook~~ and beginning the Operations Program registration process, an incoming Participant must select model~~l~~ing assumptions that best describe its business practices. These assumptions determine whether all resource and load information will be in a single or multiple groupings, as further described in the PTSO.

WPP will assign Participants to an appropriate Subregion per *BPM 102 Forward Showing Reliability Metrics*.

4.1. Forward Showing Program

Upon execution of a WRAPA, an incoming Participant will immediately engage in WRAP activities. Timelines for Advance Assessment and Data Submittal, as well as FS Submittal and Cure Period deadlines for Summer and Winter, can be found in *BPM 101 Advance Assessment* and *BPM 108 FS Submittal Process* respectively.

4.1.1. Approximating QCCs

An incoming Participant shall complete a limited Data Request to determine class average QCC values for resources it is unable to self-evaluate (see Section 4.1.2) and register loads and resources (as discussed in Section 2.2). A new Participant's resources will be assigned 100% of the class average of all registered resources of the same resource type, taking into account location where appropriate (see the discussion of late registered resources in *BPM 105 Qualifying Resources*), but unlike late registered Qualified Resources for existing Participants there is no limit on the amount of resources assigned average QCC values for a new Participant's first four FS Submittals (two Summer, two Winter).

To facilitate the process of documenting their Resource QCCs as well as preparing for the next applicable Advance Assessment, new Participants will complete a limited Data Request based on the requirements outlined in *BPM 101 Advance Assessment*, including non-Storage Hydro Qualifying Resources, Demand Response program data, and Historical Load Data. Participants have until October 1 to complete this request.

4.1.2. Calculating QCCs

For select resources, Participants will calculate their own QCCs prior to the FS Deadline. These resources include Storage Hydro, Demand Response, and thermal resources that are not subject to NERC GADS requirements (non-GADS thermals units). The methodologies for calculating these resource QCCs can be found in *BPM 105 Qualifying Resources.*

4.2. Operations Program

An incoming Participant will begin participating in the Operations Program during the Summer Binding Season the year following its execution of the WRAPA. Participants shall complete registration and testing in advance of participation in the Operations Program. For additional details on registration, Operations Program Testing, and connectivity testing, refer to the PTSO.

WESTERN POWERPOOL

Western Resource Adequacy Program

402 Protection of Commercially Sensitive and Confidential Information

400 – Auxiliary

Revision History

Manual Number	Version	Description	Revised By	Date
402	0.1	RAPC Glance Version	Beau Beljean	3/25/2024
402	0.2	Public Comment	Maya McNichol	3/28/2024
402	0.3	RAPC & PRC Discussion	Beau Beljean	5/3/2024
402	0.4	RAPC Endorsement	Beau Beljean	5/9/2024
402	0.5	Board Approval	Beau Beljean	5/29/2024
402	1.0	Board Approved	Beau Beljean	6/13/2024
402	2.0	Annual BPM Review	Elise Mousseau	12/23/25

402 Protection of Confidential and Commercially Sensitive Information

1. Introduction

Business Practice Manual 402 Protection of Confidential and Commercially Sensitive Information (BPM 402) describes the process for Participants to protect confidential or commercially sensitive information, which includes data, provided to Western Power Pool (WPP) as part of the Western Resource Adequacy Program (WRAP) and how WPP will handle confidential and commercially sensitive information in the documents, data, and information provided by any Participant and in reports compiled therefrom.

1.1. Intended Audience

BPM 402 is intended for WRAP Participants and other interested individuals or entities. This BPM will be particularly useful to Participants responsible for disclosing information to WPP, or any entity requesting the release of information from WPP.

1.2. What You Will Find in This Manual

BPM 402 explains the steps for Participants to protect confidential or commercially sensitive information provided to WPP as part of the WRAP. This BPM also details the WPP process to release WRAP information that was compiled using confidential or commercially sensitive information obtained from or pertaining to Participants.

1.3. Purpose

BPM 402 provides additional detail regarding the process for releasing aggregated or composite information derived from Participant-specific confidential or commercially sensitive information to ensure the protection of the Disclosing Entity's confidential or commercially sensitive information consistent with the Tariff.

This manual is not intended to address WPP's internal policies and controls governing the handling and protection of confidential or commercially sensitive information received by WPP and/or communicated between the Program Administrator and the Program Operator.

1.4. Definitions

All capitalized terms that are not otherwise defined in this BPM have their meaning set forth in the Tariff or in another BPM.

WPP: Consistent with Section 10 of the Tariff, references to WPP in ~~this~~ BPM 402 include the Program Administrator and its directors, officers, employees, agents, or consultants, including the Program Operator and its directors, officers, employees, agents, or consultants.

2. Background

Participants are obligated to provide WPP with information, including information that may be confidential or commercially sensitive in nature. WPP is obligated to maintain the confidentiality of information that a Participant deems and identifies as confidential or commercially sensitive. However, to keep Participants and other interested entities apprised regarding the WRAP and resource adequacy in general in the WRAP Region, WPP intends periodically to compile and release reports about various aspects of the WRAP. These reports may rely on or incorporate confidential or commercially sensitive information obtained from or pertaining to Participants that WPP is obligated to keep confidential. BPM 402 outlines the process for Participants to protect their confidential and commercially sensitive information.

3. Designation of Confidential or Commercially Sensitive Information

Except as provided in Section 8 below, when providing confidential or commercially sensitive information to WPP, Participants shall ensure that any information that is confidential or commercially sensitive is specifically identified as such. For information provided in document form (including electronic), each page that contains confidential or commercially sensitive information should be labeled at the top of the page with a clear marking such as "CONTAINS CONFIDENTIAL INFORMATION---DO NOT RELEASE." The confidential or commercially sensitive information included on each page also should be clearly marked. For information in purely electronic form that includes information that cannot be labeled or marked as confidential or commercially sensitive, the submittal of such information should include a written description of which information is confidential or commercially sensitive. WPP shall not be responsible for the release of information that is not clearly marked in accordance with the requirements set forth above.

For information containing Confidential Unclassified Information or Critical Energy Infrastructure Information as defined by FERC, the Participant must mark such information in accordance with FERC's regulations set forth in 18 C.F.R. § 388.113. WPP shall not be responsible for the release of any such information that is not clearly marked in accordance with FERC's requirements.

4. Protection of Confidential and Commercially Sensitive Information

WPP will maintain the confidentiality of all of the documents, data, and information provided by any Participant that the Participant properly designates as confidential or commercially sensitive in accordance with Section 3 of BPM 402 or that is categorically protected in accordance with Section 8 of BPM 402, except as provided in this Section 4.

4.1. General Exceptions

WPP is not obligated to maintain the confidentiality of information designated confidential or commercially sensitive in accordance with Section 3 of BPM 402 to the extent that: (i) the information is publicly available or otherwise in the public domain; (ii) it is information required to be disclosed under the Tariff or any applicable legal or regulatory requirement; (iii) it is requested by FERC, during the course of an investigation or otherwise.

4.2. Composite or Aggregated Information

WPP is permitted to release composite or aggregated information that is based on Participant-specific confidential or commercially sensitive information as outlined in Section 5.

4.3. Required Disclosures

To the extent that WPP is required by applicable laws and regulations (such as in the course of administrative or judicial proceedings) to disclose a Participant's confidential or commercially sensitive information or such information is requested by FERC (either in the course of an investigation or otherwise), WPP will not be obligated to maintain the confidentiality of the relevant Participant-specific confidential or commercially sensitive information regardless of its designation as such in accordance with Section 3 or Section 8. WPP will follow the procedure set forth in this Section 4.3 for such disclosure.

4.3.1. Notice to Affected Participants

Except as provided in Section 4.3.2 below, as soon as practicable after WPP learns of a legal or regulatory disclosure requirement and prior to making such disclosure, WPP will notify any affected disclosing Participant of the requirement and the terms thereof. WPP will use best efforts to make this notification within five Days. Upon receipt of such notification, the Participant may, at its sole discretion and own cost, direct any challenge to or defense against the disclosure requirement and WPP will cooperate with the Participant to the extent possible and take all reasonable available steps to oppose or otherwise minimize the disclosure of the information to the extent permitted by applicable legal and regulatory requirements. Such steps will be those that can be completed by WPP (including Program Operator) staff; WPP (including the Program Operator) shall not be required to expend funds to engage outside consultants or lawyers to assist in challenging the disclosure. WPP will cooperate with such disclosing Participant to the extent reasonably practicable to obtain proprietary or confidential treatment of confidential or commercially sensitive information by the person to whom such information is disclosed prior to any such compelled disclosure.

4.3.2. Disclosures to FERC

WPP may disclose confidential or commercially sensitive information, without notice to any affected disclosing Participant(s), in the event that FERC, during the course of an investigation or otherwise, requests information that is identified as confidential or commercially sensitive. In providing the information to FERC, WPP will take action, consistent with 18 C.F.R. §§ 1b.20 and/or 388.112, to request that the information be treated by FERC as confidential and non-public and, if appropriate, as Critical Energy Infrastructure Information, and request that the information be withheld from public disclosure. WPP will provide the requested information to FERC within the time frame provided in the request for information. WPP will notify any affected disclosing Participant(s) as soon as practicable after WPP is notified by FERC that a request for disclosure of, or decision to disclose, the confidential or commercially sensitive information has been received, at which time WPP and any affected disclosing Participant may respond before such information would be made public.

5. Composite or Aggregated Information

In the event that WPP wants to release information that is based upon Participant-specific confidential or commercially sensitive information so designated in accordance with Section 3 of BPM 402 or categorically protected in accordance with Section 8 of BPM 402, WPP staff will first provide affected Participants an opportunity to review the form and format to ensure the composite or aggregated information cannot be used to identify or attribute a disclosing Participant's confidential or commercially sensitive information. Such release of composite or aggregated information shall be governed by the process outlined in this Section 5.

The procedures specified in this Section 5 apply only to the first time that WPP proposes a form and format for the release of composite or aggregated information based on confidential or commercially sensitive Participant information. Subsequent releases of the same information using the same approved form and format, but which may or may not be derived from different Participant information, are permitted without any additional procedures, subject to the provisions of Section 6 regarding changes in the composition of the WRAP.

5.1. Disclosing Entity Review

Prior to the initial release of aggregated composite or aggregated information in a new form and format or for the first time, WPP staff will present the form and format of such information to each Disclosing Entity whose information was used to create the composite or aggregated information and give each Disclosing Entity an opportunity to review and object that the form or format reveals confidential or commercially sensitive Participant-specific information. Each Disclosing Entity that receives notification from

WPP staff regarding the proposed form and format will have 14 Days to communicate its objection to WPP staff using the same method of communication that was used by WPP staff to provide the form and format to the Disclosing Entity.

If any such Disclosing Entity objects to the form and format as revealing or allowing for attribution of confidential or commercially sensitive Participant-specific information, WPP staff will determine whether to modify the form and format or to retain the proposed form and format for release. If WPP staff elects to retain the proposed form and format, WPP staff will immediately inform the objecting Disclosing Entity(ies) of the decision but will not release the information until such time as such objecting Disclosing Entity(ies) has(have) had an opportunity to appeal to the RAPC.

5.2. Disclosing Entity Appeal

If WPP staff elects to retain the proposed form and format for release of aggregated or composite information over the objection of a Disclosing Entity, the Disclosing Entity has the right to appeal, and WPP will be prohibited from releasing the composite or aggregated information in the proposed form and format until the Participant's appeal rights as specified in this Section 5.2 are exhausted.

5.2.1. Disclosing Entity Appeal to RAPC

A Disclosing Entity appeal to the RAPC must be made in writing within 14 Days of receipt of notification by WPP that it has decided to retain the proposed form and format over the Disclosing Entity's objection. If a Disclosing Entity appeals a decision made by WPP staff regarding the form and format of composite or aggregated information to the RAPC, the RAPC will consider whether the form and format reveals or allows for attribution of confidential or commercially sensitive Participant-specific information during its next meeting. If the RAPC determines that the proposed form and format is sufficient to protect against the release of confidential or commercially sensitive Participant-specific information (i.e., a Participant motion at RAPC to appeal the proposed form and format does not carry), WPP staff is authorized to release the composite or aggregated information in the proposed form and format unless the Participant timely appeals the RAPC decision to the Board of Directors in writing within 14 Days of the RAPC determination.

If the RAPC agrees with the Disclosing Entity that the form and format does not sufficiently protect against the release or attribution of Participant-specific confidential or commercially sensitive information, WPP staff is prohibited from using such form and format and may propose a new form and format by repeating the process set forth in BPM 402.

5.2.2. Disclosing Entity Appeal to Board of Directors

If a Disclosing Entity appeals a RAPC decision regarding the form and format of composite or aggregated information to the Board of Directors, the Board of Directors will consider whether the form and format is sufficient to protect against the release or attribution of confidential or commercially sensitive Participant-specific information. Prior to making the decision, the Board of Directors will permit WPP staff to explain its position on the form and format and will permit the Disclosing Entity that appealed to explain its position. If the Board of Directors determines that the proposed form and format is sufficient to protect against the release of confidential or commercially sensitive Participant-specific information, WPP staff is authorized to release the composite or aggregated information in the proposed form and format. If the Board of Directors agrees with the Disclosing Entity that the proposed form and format does not sufficiently protect against the release or attribution for Participant-specific confidential or commercially sensitive information, WPP staff is prohibited from using such form and format and may propose a new form and format by repeating the process set forth in BPM 402. Board of Directors' decisions are final.

5.2.3. Waiver for Failure to Appeal

Once a proposed form and format of composite or aggregated information is approved by WPP staff and is not appealed or appeals are unsuccessful, such form and format may be used for all future disclosures of similar composite or aggregate information and no Participant may dispute such release, except as provided in Section 6. If WPP staff proposes to alter the form and format, including but not limited to changing the granularity of information, WPP staff is required to follow the process set forth in this BPM 402 and affected Disclosing Entities will have the right to appeal such changes in form and format as set forth herein.

6. Objection to Format for Change in Participants

Notwithstanding the provisions in Section 5.2, if the composition of Participants in the WRAP changes, WPP staff shall provide each Disclosing Entity the opportunity to review the aggregate or composite data prior to the next release of such data to ensure that the form and format of composite or aggregated information remains sufficient to protect against disclosure or attribution of confidential or commercially sensitive Participant-specific information. Based on this review, an aggrieved Participant shall have a one-time right to raise the issue with WPP for presentation to and review by the Board of Directors, which must be done in writing addressed to the WPP president and provided within 14 Days of WPP staff providing the aggregate or composite data to the Disclosing Entity for review. WPP staff will promptly present the issue to the Board of Directors during its next meeting and will refrain from issuing reports utilizing such

challenged form and format pending review by the Board of Directors. The Board of Directors in its sole discretion will decide whether the change in composition results in the form and format of the composite or aggregated information becoming insufficient to protect against the release or attribution of confidential or commercially sensitive Participant-specific information; provided, however, that if an aggrieved Participant does not raise its concerns to WPP within 14 Days of WPP staff providing the opportunity to review the aggregate or composite data, such Participant shall have waived its right to contest the release of such composite or aggregated information.

7. RAPC Decision to Release Participant-Specific Information

The RAPC may, by unanimous vote, authorize the release of any particular category of Participant-specific information notwithstanding a designation of such information as confidential or commercially sensitive. Such authorization shall remain in effect and binding on all current and future Participants until such time as such authorization is revoked by a subsequent unanimous vote of the RAPC. The RAPC has unanimously voted to release the following categories of Participant-specific information:

- ~~none~~Median Monthly P50 Peak Load

Per section 10.2.2 of the Tariff, this list will be modified solely by unanimous vote of the RAPC, and this BPM will be updated ~~automatically~~ to remain current with the RAPC-approved list.

8. Categories of Information that Will Be Treated as Confidential

In addition to the ability of individual Participants to designate their Participant-specific data and information as confidential and commercially sensitive as set forth in Section 3 of BPM 402 and Section 10 of the Tariff, WPP will treat as confidential and commercially sensitive the following Participant-specific information submitted to WPP by Participants, and will follow all Tariff, BPM 402, and WPP internal procedures governing the protection, handling, use, and release of such data and information:

- All data and information submitted by a Participant to satisfy the Tariff provisions governing the Advance Assessment as set forth in Section 14 of the Tariff;
- All data and information submitted by a Participant to satisfy the Tariff provisions governing the Forward Showing Program as set forth in Section 14 of the Tariff; and
- All information and data submitted by a Participant to satisfy the Tariff provisions governing the Operations Program as set forth in Section 20 of the Tariff.

WPP will treat all such data and information as confidential or commercially sensitive and protected from public release as if a Participant had designated it as such pursuant to Section 3 of BPM 402 and Section 10 of the Tariff.

9. Summary

~~WPP will make available and post on its website a~~ A visual representation of the process for releasing information described in ~~this~~ BPM 402 is posted on the WPP website.